

NAT'L INST OF STAND & TECH R.I.C.



A11104 051508

NATIONAL INSTITUTE OF STANDARDS &
TECHNOLOGY
Research Information Center
Gaithersburg, MD 20899

NBS
PUBLICATIONS

111
NBSIR 80-2081R

Comparison of Selected Codes and Standards Relating to Existing Residential Buildings

Patrick W. Cooke

Building Economics and Regulatory Technology Division
Center for Building Technology
National Engineering Laboratory
National Bureau of Standards
U.S. Department of Commerce
Washington, D.C. 20234

July 1980



QC
100
U56
80-2081
1980
c. 2

NATIONAL BUREAU
OF STANDARDS
LIBRARY

SEP 19 1980

Not acc - Circ

QC100

.U56

80-2081

1980

.L2

NBSIR 80-2081

**COMPARISON OF SELECTED CODES
AND STANDARDS RELATING TO
EXISTING RESIDENTIAL BUILDINGS**

Patrick W. Cooke

Building Economics and Regulatory Technology Division
Center for Building Technology
National Engineering Laboratory
National Bureau of Standards
U.S. Department of Commerce
Washington, D.C. 20234

July 1980

U.S. DEPARTMENT OF COMMERCE, Philip M. Klutznick, *Secretary*

Luther H. Hodges, Jr., *Deputy Secretary*

Jordan J. Baruch, *Assistant Secretary for Productivity, Technology, and Innovation*

NATIONAL BUREAU OF STANDARDS, Ernest Ambler, *Director*

TABLE OF CONTENTS

	<u>Page</u>
ABSTRACT	vi
1. INTRODUCTION.	1
2. RATIONALE FOR IDENTIFICATION OF TECHNICAL BASIS OF REGULATIONS	2
3. MAGNITUDE OF BUILDING REHABILITATION IN THE UNITED STATES.	2
4. CODE DOCUMENTS INCLUDED IN STUDY	3
5. BACKGROUND OF HOUSING CODES AND THEIR ENFORCEMENT.	4
6. DESCRIPTION OF REGULATIONS APPLICABLE TO BUILDING REHABILITATION PROJECTS.	5
6.1 REHABILITATION GUIDELINES DEVELOPED BY MODEL CODE ORGANIZATIONS	5
6.2 GUIDELINES FOR HUD REHABILITATION PROJECTS.	5
7. COMPILATION OF MAJOR CODE AREAS FOR COMPARATIVE ANALYSIS	6
8. FORMAT OF STUDY AND PRESENTATION OF COMPARATIVE INFORMATION	10
9. COMPARISON OF STRUCTURAL REQUIREMENTS	11
10. COMPARISON OF SPACE, OCCUPANCY AND FACILITY REQUIREMENTS.	21
11. COMPARISON OF WINDOWS AND DOORS	35
12. COMPARISON OF STAIRS, RAMPS, LANDINGS, PORCHES, BALCONIES	42
13. COMPARISON OF FIRE PROTECTION/FIRE SAFETY REQUIREMENTS.	48
14. COMPARISON OF MEANS OF EGRESS/EXITS	52
15. COMPARISON OF LIGHT AND ILLUMINATION REQUIREMENTS	61
16. COMPARISON OF VENTILATION REQUIREMENTS.	68

TABLE OF CONTENTS (Continued)

	<u>Page</u>
17. COMPARISON OF MECHANICAL REQUIREMENTS	76
18. COMPARISON OF ELECTRICAL REQUIREMENTS	84
19. COMPARISON OF PLUMBING REQUIREMENTS	92
20. COMPARISON OF HEALTH AND SANITATION REQUIREMENTS	101
21. COMPARISON OF ELEVATOR REQUIREMENTS	110
22. COMPARISON OF CHIMNEYS, VENTS AND INCINERATORS	114
23. COMPARISON OF NOISE ABATEMENT REQUIREMENTS	122
24. COMPARISON OF QUALITY OF MATERIALS AND PRODUCTS	126
25. GENERAL FINDINGS AND CONCLUSIONS	130
REFERENCES	131
APPENDICES	132

LIST OF TABLES

	<u>Page</u>
Table 1 - Major Code Areas for Comparison and Analysis	7
Table 2 - Structural Requirements - Summary Comparison of Provisions	13
Table 3 - Space, Occupancy and Facility Requirements - Summary Comparison of Provisions.	25
Table 4 - Windows and Doors - Summary Comparison of Provisions	37
Table 5 - Stairs, Ramps, Landings, Porches, Balconies - Summary Comparison of Provisions	45
Table 6 - Fire Protection/Fire Safety - Summary Comparison of Provisions	49
Table 7 - Means of Egress/Exits - Summary Comparison of Provisions	55
Table 8 - Light and Illumination - Summary Comparison of Provisions.	63
Table 9 - Ventilation Requirements - Summary Comparison of Provisions	71
Table 10 - Mechanical Requirements - Summary Comparison of Provisions	79
Table 11 - Electrical Requirements - Summary Comparison of Provisions	87
Table 12 - Plumbing Requirements - Summary Comparison of Provisions	95
Table 13 - Health and Sanitation - Summary Comparison of Provisions	103
Table 14 - Elevators - Summary Comparison of Provisions	111
Table 15 - Chimneys, Vents & Incinerators - Summary Comparison of Provisions.	117
Table 16 - Noise Abatement Requirements - Summary Comparison of Provisions.	123
Table 17 - Quality of Materials and Products - Summary Comparison of Provisions	127

ABSTRACT

The performance levels of older residential buildings generally do not comply with the standards for safety or function that are required of new buildings. This report presents a comparative analysis of the specific provisions contained in seven codified documents that have been promulgated to regulate the health and safety of existing residential buildings. The study examines and presents information on:

1. The extent to which codes vary among each other in establishing minimum requirements for life, health and safety in existing dwellings.
2. The differing approaches provided by traditional housing codes in contrast to more recently developed rehabilitation guideline documents regarding performance levels.
3. The degree to which each code meets its intended goals of providing and maintaining human shelter, protection, and privacy.

The code provisions are compared and analyzed in sixteen major code areas (e.g., structural requirements, light and illumination, plumbing requirements, etc.). Various inconsistencies among code documents with respect to uniformity and irrational approaches in the historical development of code provisions are indicated.

Key Words: Building rehabilitation; codes; comparative analysis; existing buildings; housing codes; maintenance, model codes; occupancy; performance levels; regulation; standards.

1. INTRODUCTION

This report presents the results of a study undertaken to identify and compare the performance levels of selected code provisions contained in seven model codified documents which deal with the occupancy, maintenance and rehabilitation of existing residential buildings. While the primary regulatory intent of these documents, as a group, is to establish minimum standards essential to good health and to make existing dwellings safe, sanitary and fit for human habitation, they individually take different approaches in attempting to achieve their defined goals and objectives. Aside from establishing minimum standards for what is claimed to be public health and safety, there is also a tendency to include provisions that establish various levels for housing amenities and arbitrary standards of livability (i.e., comfort) for dwellings. In this regard, the performance levels of such regulatory criteria and their degree of enforcement can and do have significant economic and social impacts on our existing stock of housing, as well as the direction and extent of upgrading when converting existing buildings of all types to residences through rehabilitation.

This comparison was carried out with the following purposes in mind:

1. Assist in identifying both implicit and explicit levels of performance currently required for existing residential buildings.
2. Provide a logical baseline from which selection of any revised compliance levels can be established by regulatory authorities.
3. Assist in the identification and definition of needed research study areas relative to the technical bases of regulations and development of priorities.

4. Demonstrate the degree of uniformity or non-uniformity among what are ostensibly model regulations promulgated for local adoption and enforcement on a national or regional basis can be demonstrated.

The report is intended as a resource document for building researchers, regulatory policy makers and those involved in the development and promulgation of building codes and standards.

The study output relates to current and ongoing research programs at the National Bureau of Standards' (NBS) Center for Building Technology (CBT). Most closely related of these research areas is the Building Rehabilitation Technology Program, which has among its several goals the development of the technical basis of regulations [1]*. The regulatory strategy developed by the State of Massachusetts [2] for the rehabilitation of existing buildings suggests that the levels of performance may be less than that for new construction as long as minimum life-safety and health levels are maintained. The codes included in this comparison study have no direct effect on new construction, since existing buildings generally do not comply with the standards for safety and function that are required of new buildings. The study results, therefore should give a good measure of what is perceived as minimum levels of acceptability regarding the performance of existing residential buildings. It will also be used in an ongoing CBT project on the development of a methodology for establishing the performance levels of existing buildings.

*References are listed at end of report.

2. RATIONALE FOR IDENTIFICATION OF TECHNICAL BASIS OF REGULATIONS

Through research sponsored by the Center for Building Technology's Building Rehabilitation Technology Program, the Massachusetts Institute of Technology (MIT) in their study on regulatory barriers to the reuse of existing buildings identified several areas in need of thorough technical evaluation. The MIT report [3] indicated that many code provisions are highly anecdotal and are not based on wide experience nor a stated technical base. It gave as an example the fact that current light and ventilation standards were based on cannel coal use and control of communicable disease, particularly diptheria. Our current standards and health problems should be reflected in an updated code. This finding was particularly a problem for existing buildings, because of the limits on alternative systems or evaluations. The need for sound technical bases of code criteria was supported in the report recommendations by calling for the investigation of safety or hazard levels for existing buildings based on use type, construction, occupancy level and configuration.

At hearings of the Committee on Banking, Housing and Urban Affairs, on March 24, 1978 [4] the need for research to determine minimum health and safety performance standards for older buildings was cited along with the need for separate "habitation standards" to cover such items as minimum ceiling heights, minimum floor area per room, etc.

3. MAGNITUDE OF BUILDING REHABILITATION IN THE UNITED STATES

Economic, social, political and cultural factors today exist which compel the continued use of our existing building stock. This is especially significant since the U.S. is seriously behind in the ten-year goal of 26 million new or rehabilitation units in 1968. As recently as 1973, 12.8 million dwelling units (18% of the total 69.3 million) were identified as suffering from one or more serious deficiencies.

The reuse of older buildings has grown far beyond the historic preservation movement that spawned it to the point where it now has significant economic impact on the building community. Nearly all existing structures are now viewed as assets that can be reclaimed. Increasingly, rehabilitation of buildings is becoming a part of urban planning strategies in all parts of the country. This transition is taking place in both the private and public sectors resulting in the redirection of resources from new construction to renovation and alteration work. Recent Census Bureau information indicate that rehabilitation of old buildings, commercial and residential, now accounts for a third of all construction activity in the United States. That translates into a 52 billion dollar a year industry, of which more than one half is made up of housing renovation and remodeling and conversion of other buildings for residential occupancy [5].

4. CODE DOCUMENTS INCLUDED IN STUDY

To obtain a realistic measure of current performance levels for existing housing, several model housing codes, as well as those available standards developed especially for rehabilitation of residential properties, were considered for detailed examination in the study. A total of seven code documents were finally selected; five model housing codes which have different spheres of influence or constituencies in various parts of the country and two guideline documents which have been developed at the national level and relate specifically to the physical rehabilitation of buildings for residential occupancy. The following is a brief description of each of the seven selected code documents.

1. APHA-CDC Recommended Housing Maintenance and Occupancy Ordinance, 1975 Revision [6] - This code was first published in 1952 by the Committee on the Hygiene of Housing of the American Public Health Association (APHA) to assist municipalities with the development of legislation necessary to regulate the quality of housing. It is considered by many to have been the first fundamental model housing code in this country. The first revision, in 1967, was drafted by APHA in collaboration with the Office of Urban Environmental Health Planning, U.S. Public Health Service. Additional revision was necessary as housing conditions changed resulting in the 1975 version, which is a cooperative effort of APHA's Committee on Housing and Health and the Center for Disease Control (CDC) of the U.S. Department of Health, Education and Welfare.
2. New York State Model Housing Code, 1974 Edition [7] - This code is published as a guide to New York municipalities for voluntary adoption in meeting housing regulation and requirements under Federal and State

urban renewal and housing programs. The code is divided into four major parts covering: (1) convention residential premises; (2) mobile homes; (3) migrant housing; and, (4) administration and enforcement. The part on conventional residential buildings is designed to be consistent with the New York State Building Construction Code, which regulates new construction.

3. Uniform Housing Code, 1979 Edition [8] - The International Conference of Building Officials (ICBO) promulgates the Uniform Housing Code for the conservation and rehabilitation of housing. It is intended to be compatible with the Uniform Building Code.
4. Standard Housing Code 1979 [9] - The Standard Housing Code is published and maintained by the Southern Building Code Congress International, Inc. (SBCCI) as a minimum code for the use, occupancy and maintenance of existing buildings.
5. The BOCA Basic Property Maintenance Code, 1978 Edition [10] - This code is published by the Building Officials and Code Administrators International, Inc. (BOCA) to establish minimum acceptable standards for the maintenance of existing buildings.
6. Code Enforcement Guidelines for Residential Rehabilitation [11] - BOCA developed a set of rehabilitation provisions and published them under the title "Code Enforcement Guidelines for Residential Rehabilitation" (First Edition, 1975). The studies that formed the basis for these guidelines were conducted under a contract with the U.S. Department of Housing and Urban Development (HUD). Although published by BOCA, the other three model code organizations cooperated in their development.

7. HUD's Minimum Design Standard for Rehabilitation for Residential Properties [12] - Guidelines setting forth basic objectives and provisions specifically related to building rehabilitation have been issued by the U.S. Department of Housing and Urban Development-Federal Housing Administration (HUD-FHA) for use under various HUD-FHA mortgage insurance programs dealing with property rehabilitation. These HUD guidelines, contained in Handbook 4940.4 entitled, "Minimum Design Standards for Rehabilitation for Residential Properties," were originally issued in September 1973. Several additions (e.g., provisions for handicapped, elderly, lead-based paint hazards, thermal performance measures and earthquake hazards) and certain changes (e.g., to fire protection and life safety provisions) were made to the Handbook and incorporated in later versions.

5. BACKGROUND OF HOUSING CODES AND THEIR ENFORCEMENT

Housing codes are like building codes in that they apply to structures; they have no direct effect on new construction, however, because they apply only to existing dwellings. Whereas building codes regulate the minimum conditions for new construction and development, housing codes regulate the minimum conditions for occupancy. They can be applied retroactively to remove substandard conditions created by changes in minimum housing requirements. They establish minimum standards for such things as sanitation, light, ventilation, space heating, and cooking equipment. They also regulate maintenance and safety; fix the responsibilities of owners, operators, and occupants of all buildings; and provide for administration, enforcement, and in some cases penalties.

While the four model housing codes currently in use contain similar statements of purpose, the place of such codes in a larger housing policy is a matter of controversy. The National Commission on Urban Problems has observed that at "almost all levels of government there are conflicting policies as to what housing codes are and confusion as to what they should do, how they can be enforced, and what role if any, they should play in helping to provide an abundance of decent housing for American people." To most nineteenth-century reformers, improved housing was essential to any program that could hope to wipe out the pattern of social evils represented by slum life. The proponents of the New York Tenement House Law of 1867, which many regard as the first housing code, blamed the slumlord not only for the appalling physical conditions in which urban slum dwellers had to live, but also for the social pathology typical of slum life. For the reform movement, the purpose of housing codes was to eliminate the social pathology of poverty.

Housing codes, like building and zoning codes, are exercises of the State police power. Most of them are enacted and enforced by municipalities, although a few counties have also done so. Most codes are applicable only within the municipal limits, but in a few cases they have limited extraterritorial effect. While the major model codes previously referred to serve as the basis for many local codes, most localities add their own embellishments. At the same time, while the model codes have had widespread acceptance among the smaller cities, most major cities have chosen to draft their own.

6. DESCRIPTION OF REGULATIONS APPLICABLE TO BUILDING REHABILITATION PROJECTS

To date, there have been only limited attempts to formulate technical code provisions peculiar to building rehabilitation needs. The following is a brief description of two known documents presently available which specifically cover rehabilitation of buildings for residential occupancy and as previously indicated were included in this study.

6.1 REHABILITATION GUIDELINES DEVELOPED BY MODEL CODE ORGANIZATIONS

The Code Enforcement Guidelines for Residential Rehabilitation [11] have not been widely adopted by State and local government jurisdictions. The guidelines are intended for only residential buildings and specifically exclude hotels, motels, and other housing for transients. Even though the stated purpose of the guidelines is for the physical rehabilitation of older residential buildings with respect to safety and habitability considerations, many of the significant provisions contained in the guidelines consistently refer to the building code for new construction for the specific requirements. Even though the guidelines address some of the needs of existing neglected, run-down or unsafe buildings that are basically structurally sound, strict enforcement of the provisions would likely work an undue economic hardship on many owners, developers and builders.

6.2 GUIDELINES FOR HUD REHABILITATION PROJECTS

These HUD guidelines contained in Handbook 4940.4 entitled "Minimum Design Standards for Rehabilitation for Residential Properties [12] were originally issued in September 1973.

The guidelines apply to the physical rehabilitation of existing residential properties, from single family dwellings to large multistory, elevator-type apartment buildings, in all HUD field office jurisdictions. The guidelines do not relieve the property owner, project sponsor, nor the builder of responsibility for complying with local ordinances, codes, and other building regulations that may also be applicable. This is because HUD's minimum design standards are intended to cover design and occupancy considerations of neglected and run-down properties and focus primarily on mortgage insurance considerations (e.g., increased marketability). They are not fully intended to serve in the context of a building code (i.e., primarily health and safety aspects). The structure and format of the guidelines is such that the "minimum" requirements are stated mostly in performance terms, with supplementary guides to good practice contained in accompanying, but separate sections.

7. COMPILATION OF MAJOR CODE AREAS FOR COMPARATIVE ANALYSIS

As would be expected both the content and style of presentation for each code document deviated extensively. Also, the treatment and extent of coverage in the context of specific code provisions varied significantly from code to code. In order to make valid one-on-one comparisons the code documents had to be dissected and rearranged in a format that would facilitate comparison. Sixteen major code areas were decided upon based on the overall content of the seven documents. Not all codes had provisions that addressed all of the major code areas. Similarly, in those major code areas where provisions existed, the degree and extent of coverage fluctuated from code to code. Even though this unevenness with regard to the provisions and their extent of coverage can be depicted graphically among the seven code documents, no direct or indirect attempt has been made to rank or grade the codes. The sixteen major code areas decided upon for the study are as follows:

1. Structural Requirements
2. Space, Occupancy and Facility Requirements
3. Windows and Doors
4. Stairs, Ramps, Landings, Porches, Balconies
5. Fire Protection/Fire Safety
6. Means of Egress/Exits
7. Light and Illumination
8. Ventilation Requirements
9. Mechanical Requirements
10. Electrical Requirements
11. Plumbing Requirements
12. Health and Sanitation
13. Elevators

14. Chimneys, Vents and Incinerators
15. Noise Abatement Requirements
16. Quality of Materials and Products

The scope of the study is intended to cover all types of residential occupancies as defined by the codes. However, some of the codes make specific distinctions in the body of their provisions between various types of residential buildings (e.g., one-and two-family dwellings vs. multiple dwellings). Other codes in this study do not recognize this type of classification with respect to use or size of residential building.

A summary chart listing all major code areas and the subareas along with a graphic display showing the code areas where each code document provides at least a minimum level of coverage in its provisions is given in the following tables on pages 7, 8 and 9.

TABLE 1
Major Code Areas for Comparison and Analysis

Subject Matter		AFIA CDC Housing Maint Ordinance	N.Y. State Model Housing Code	Uniform Housing Code (UHCD)	Sid Housing Code (SRCC)	Basic Property Maint Code (BOCA)	Code Enforcement Ordinance for Rehab (BOCA)	HUD Min Stds for Rehab 4940.4
STRUCTURAL REQUIREMENTS	Structural Soundness							
	Protection From Weather and Other Elements				0			
	Earthquake Hazard Reduction	0	0	0	0	0	0	
	Protection From Termites, Decay, Etc.	0					0	
	Exterior Structural Elements - Foundations	0					0	
	Exterior Structural Elements - Walls	0	0	0			0	
	Exterior Structural Elements - Roofs						0	
	Exterior Structural Elements - Appurtenances			0			0	
	Interior Space - Dividers - Floors, Walls, Ceilings	0						
	Thermal Protection	0	0	0	0	0	0	
Accessory Structures		0	0		0	0		
SPACE, OCCUPANCY AND FACILITY REQUIREMENTS	Spatial Requirements - Habitable Rooms							
	Spatial Requirements - Sleeping Rooms							
	Spatial Requirements - Kitchens							
	Spatial Requirements - Ceiling Heights							
	Spatial Requirements - Storage Space		0	0	0	0		
	Spatial Requirements - Habitable Rooms Below Grade			0				
	Physical Arrangement of Space - Privacy - Common Access			0				
	Physical Arrangement of Space - Efficiency Living Units	0	0		0	0	0	0
	Occupancy Limitations - Maximum Occupancy							
	Occupancy Limitation - Prohibited uses	0		0	0		0	0
	Basic Facilities and Equipment - Kitchen							
	Basic Facilities and Equipment - Bathroom							
Basic Facilities and Equipment - Laundry, Utility, Other		0	0	0	0			
WINDOWS AND DOORS	Exterior Protection - Weather proofing			0			0	
	Thermal Protection	0	0	0	0	0	0	
	Glazing	0	0	0			0	
	Screens		0	0			0	
	Hardware/Physical Security		0	0			0	
	Size	0	0	0	0	0		
	Existing Conditions	0	0	0	0	0	0	
STAIRS, RAMPS, LANDINGS, PORCHES, AND BALCONIES	Stairways, Ramps, Landings			0				
	Handrails, Guardrails			0			0	
	Porches and Other Appurtenance			0			0	

LEGEND  Code has at least one provision addressing this subject area

 Code has no provisions addressing this subject area

Major Code Areas for Comparison and Analysis (cont.)

Subject Matter		APHA CDC Housing Maint Ordinance	N Y State Model Housing Code	Uniform Housing Code (ICBO)	Std Housing Code (SBCCI)	Basic Property Maint Code (BOCA)	Code Enforce ment Guide for Rehab (BOCA)	HUD Min Side for Rehab 4940.4
FIRE PROTECTION - FIRE SAFETY REQUIREMENTS	Basis of Requirements	0	/	/	/	/	/	/
	Fire Resistance/Fire Equipment	0	/	/	/	/	/	/
	Fire Protection Systems and Equipment	0	/	/	/	/	/	/
	Prohibited Conditions	0	/	0	0	/	0	0
MEANS OF EGRESS / EXITS	Means of Escape	/	/	/	/	/	/	/
	Fire Escapes	0	/	0	0	/	0	0
	Exit Signs	0	/	0	0	/	0	0
LIGHT AND ILLUMINATION REQUIREMENTS	Natural Light - Habitable Rooms	/	/	/	/	/	/	/
	Natural Light - Non Habitable Rooms	/	/	0	/	/	0	/
	Artificial Light - Habitable Rooms	/	/	/	/	/	/	/
	Artificial Light - Non Habitable Rooms	/	/	/	/	/	/	/
VENTILATION REQUIREMENTS	Artificial Light - Exterior Areas	0	/	0	0	0	0	0
	Natural Ventilation - Habitable Rooms	/	/	/	/	/	/	/
	Natural Ventilation - Non- Habitable Rooms	/	/	/	/	/	/	/
	Mechanical Ventilation - Habitable Rooms	/	/	/	/	/	/	/
	Mechanical Ventilation - Non- Habitable Rooms	0	/	/	0	0	/	0
MECHANICAL REQUIREMENTS	Other Building Spaces	0	/	0	0	/	/	/
	Minimum Thermal Requirements	/	/	/	/	/	/	/
	Installation and Clearances	/	/	/	/	/	/	/
	Prohibited Equipment / Fuels	/	/	/	/	/	0	/
	Safety Controls	0	/	0	0	/	0	0
	Combustion Air Supply	0	/	/	0	/	0	0
	Removal of Products of Combustion	0	/	0	0	/	0	0
	Existing Conditions	0	0	0	0	0	/	/
Mechanical Ventilation/Climate Control Facilities	/	/	/	/	/	/	/	
ELECTRICAL REQUIREMENTS	Electric Service - Availability	/	/	/	/	/	/	/
	Electric Service - Service Capacity	/	/	0	0	0	/	/
	Electric Service - Installation	/	/	/	/	/	/	/
	Electric Service - Existing Conditions	0	0	0	0	/	/	/
	Electrical Facilities - Habitable Rooms	/	/	/	/	/	/	/
	Electrical Facilities - Kitchens	/	/	/	/	/	/	/
	Electrical Facilities - Non- Habitable Rooms	/	/	/	/	/	/	/
	Electrical Facilities - Other Building Spaces	/	/	/	/	/	/	/
	Electrical Facilities - Exterior Areas	0	/	0	0	0	0	0

LEGEND



Code has at least one provision addressing this subject area



Code has no provisions addressing this subject area

Major Code Areas for Comparison and Analysis (cont.)

Subject Matter		APHA CDC Housing Maint Ordinance	N Y State Model Housing Code	Uniform Housing Code (ICBO)	Std Housing Code (SRCC)	Basic Property Main Code (BOCA)	Code Enforce ment Guide for Rehab (BOCA)	HUD Min Sds for Rehab 4940.4
PLUMBING REQUIREMENTS	Domestic Water Supply and Distribution	/	/	/	/	/	/	/
	Sewage Drainage System - Means of Disposal	/	/	/	/	/	/	/
	Sewage Drainage System - Cleanouts/Maintenance	0	/	0	0	/	0	0
	Water Heating, Storage and Distribution - Supply	/	/	/	/	/	/	/
	Water Heating, Storage and Distribution - Storage	/	/	/	/	/	/	/
	Water Heating, Storage and Distribution - Safety	0	/	0	/	/	/	/
	Plumbing Fixtures - Basic Facilities	/	/	/	/	/	/	/
	Plumbing Fixtures - Installation/ Maintenance	/	/	/	/	/	/	/
	Plumbing Fixtures - Existing Conditions	0	0	0	0	0	/	/
	Plumbing Fixtures - Prohibited Uses	0	/	/	0	0	0	0
	Plumbing Fixtures - Water Conservation	0	0	0	0	/	0	0
	Water Supply Tanks	0	/	0	0	0	0	0
Storm Drainage System	/	/	0	0	/	/	/	
HEALTH AND SANITATION REQUIREMENTS	Refuse Collection and Disposal	/	/	/	/	/	0	/
	Harborage of Insects and Rodents	/	/	/	/	/	0	/
	Lead Based Paint	/	/	0	0	/	/	/
	Maintenance of Sanitary Conditions	/	/	/	/	/	0	0
ELEVATORS	Construction, Installation, Maintenance	0	/	0	0	/	0	/
CHIMNEYS VENTS AND INCINERATORS	Construction, Installation, Maintenance	/	/	/	0	/	/	/
	Factory-Built Chimneys	0	0	0	0	0	0	/
	Spark Arresters	0	/	0	0	0	0	0
	Incinerators	0	/	0	0	0	0	/
NOISE ABATEMENT	Noise Reduction and Isola	0	/	0	0	0	0	/
QUALITY OF MATERIALS AND PRODUCTS	Degree of Conformance	/	0	/	0	0	/	/
	Use of Second-Hand Materials	0	0	0	0	0	/	/
	Use of Alternate Materials	0	0	0	0	0	/	0
	Reference Standards/Product Labeling	0	0	0	0	0	/	/

LEGEND: Code has at least one provision addressing this subject area

Code has no provisions addressing this subject area

8. FORMAT OF STUDY AND PRESENTATION OF COMPARATIVE INFORMATION

The methodology used to carry out the individual code comparisons involved a complete diagnosis of each code document along with aligning corresponding provisions side-by-side under common subject headings and subheadings (e.g., "minimum floor area for dwelling units and habitable rooms" under heading "Spatial Characteristics and Arrangement"). In many cases individual judgments had to be made about the proper placement of numerous provisions because among the seven code documents there is no consideration given for consistency of content or unified formats or terminology. This resulted in some discretionary judgments being made on the actual placement of certain code provisions among the sixteen major code areas as identified in section 7. The sixteen major code area side-by-side comparisons containing actual or abridged code provisions along with a reference citations to the specific code section for each provision are given in appendices A through P of this report.

Salient characteristics of the provisions were further extracted from the comparisons tables in the appendices for more objective comparison and analysis in a series of tables, - one for each major code area - entitled Summary Comparison of Provisions. These summary comparison tables are organized to show differences in similar provisions among the codes, those code areas where provisions are missing, inconsistencies and contradictions, if any, among provisions, as well as those areas where the requirements for new construction are referenced. The intent is to point out differences and conflicts among the provisions and not to grade or classify the code documents themselves. The individual comparisons by major code area along with a narrative discussion describing the extent of coverage and the significant findings in each code are given in sections 9 through 25 of this report.

9. COMPARISON OF STRUCTURAL REQUIREMENTS*

A. Extent of Coverage

The code provisions that have been grouped in this section of the comparison have as their primary purpose the prevention of structural failures in existing buildings along with the protection of building components and occupants from weather and other elements. Generally, the housing codes place emphasis upon the visible interior and exterior parts of a completed dwelling that have a bearing in general terms on the structural soundness, state of repair and safety of the building during its intended use. The rehabilitation guideline documents and in particular, the HUD Minimum Design Standards for Rehabilitation for Residential Properties expand on these elements to include other aspects of refurbishing an existing building to include such construction related items as earthquake hazard evaluation, thermal protection considerations, (i.e., ceiling, wall, and under floor insulation), windows and doors, exterior and interior finishes, and the durability aspects of painting and decorating the walls and ceilings.

The provisions in the housing code documents tended to be short general statements relating to structural soundness or resistance to weather and are organizationally located in a smaller chapter or section generally entitled "Structural Requirements." The rehabilitation guideline documents have the corresponding provisions in a chapter or section entitled "Construction" and in the case of the HUD document two major chapters of

* The summary comparison charts related to Structural Requirements immediately follow this discussion on pp. 13. Appendix A at the rear of this report contains the actual (or in some cases abstracted) code provisions along with the appropriate source citation.

text contain requirements and corresponding guidelines on topics related to this subject area but slanted toward renovation.

Other sections of this comparative analysis also relate to or interact with this discussion on structural requirements. These are tables on Windows and Doors (see pp. 37) and Stairs, Ramps, Landings, Balconies, Porches (see pp. 45).

B. Significant Findings

B.1 Among Housing Codes

As indicated most of the provisions in the five housing codes contained general statements about structural soundness and maintenance of safe and weathertight conditions. Not all of the housing codes addressed every element in the array of subjects in the comparison. (See Summary Comparison Chart for specific areas of coverage.) Of the five housing codes, the most extensive direct treatment with regard to upkeep and maintenance aspects was that provided by the Basic Property Maintenance Code. The Uniform Housing Code is the only code that verbally attempts to describe inadequate or faulty conditions in existing buildings by way of the criteria that are provided in its overall definition of a 'substandard building.' However, the Uniform Housing Code also specifically requires that all structural elements be proportioned and joined in accordance with the stress limitations and design criteria as specified in the building code for new construction. It further emphasizes the requirement by stating that all buildings shall comply with the applicable requirements of the Building Code, which by definition is the Uniform Building Code. The New York State Model Housing Code also defers to the corresponding New York State Building Construction Code for loading criteria of structural elements.

All of the housing codes have some provisions for protecting wood from decay and termite damage except the APHA-CDC Recommended Housing Maintenance and Occupancy Ordinance, which also does not cover foundations, exterior walls, or interior walls, floors and ceilings. The Standard Housing Code does not specifically cover exterior protection from weather and other natural elements. None of the housing codes have any provisions relative to requiring insulation or other measures for thermal protection nor do they address earthquake hazard reduction considerations. However, seismic protection may be covered indirectly by those housing codes that make reference to the building code for new construction.

Two of the housing codes, the APHA-CDC Recommended Housing Maintenance and Occupancy Ordinance and the Standard Housing Code are the only codes that address accessory structures (e.g., garages, storage buildings, etc.) on the premises.

B.2 Between Rehabilitation Guidelines

Note that the provisions on this subject contained in the Code Enforcement Guidelines for Residential Rehabilitation are meager in contrast to those contained in the HUD Minimum Design Standards for Rehabilitation for Residential Properties and even those in the group of housing codes. The most extensive treatment in the Code Enforcement Guidelines is that given for interior finish requirements of floors, walls and ceilings of rehabilitated buildings. Other structural components and aspects of rehabilitation construction are not covered at all or are dealt with in very general terms.

The HUD Minimum Design Standards for Rehabilitation for Residential Properties covers all of the elements contained in the comparison and is unique in the fact that it alone gives consideration to earthquake hazards; thermal insulation of walls, ceilings and floors; restrictions on abrasive wall finishes in housing for the

elderly; removal of uneconomically repairable exterior appurtenances or accessory structures; and general treatment of interior and exterior finishes.

B.3 Between Housing Codes and Rehabilitation Guidelines

The comparison of structural requirements is one of the most vivid in discerning the different intent of the two groups of code documents. The housing codes in a somewhat superficial manner concentrate on maintaining a safe and sound structure and in some cases bring in by reference the code requirements for new construction. In such cases an almost impossible situation is created. The rehabilitation guideline documents, at least as exemplified by the HUD Minimum Design Standards for Rehabilitation for Residential Properties address or give consideration to many of the regulatory and economic factors that will affect rehabilitation construction and the serviceability of such buildings during their expected remaining useful life.

TABLE 2

STRUCTURAL REQUIREMENTS - SUMMARY COMPARISON OF PROVISIONS

STRUCTURAL REQUIREMENTS - Summary Comparison of Provisions

SUBJECT MATTER	APHA-CDC RECOMMENDED HOUSING MAINTENANCE AND OCCUPANCY ORDINANCE, 1975 REV.	NEW YORK STATE MODEL HOUSING CODE, 1974	UNIFORM HOUSING CODE, 1979 EDITION (ICBO)
<p>A. <u>STRUCTURAL SOUNDNESS</u> 1. <u>SAFETY AND SERVICEABILITY</u> a. Provides general requirement on adequacy of structural members</p>	<ul style="list-style-type: none"> ◦ safe to use ◦ capable of supporting loads ◦ sound condition and good repair 	<ul style="list-style-type: none"> ◦ conform to loading criteria in New York State Codes <u>1/</u> ◦ stress limitations of accepted standards 	<ul style="list-style-type: none"> ◦ capable of resisting all forces and loads ◦ comply with stress limits and design criteria in Building Code <u>2/</u>
<p>B. <u>PROTECTION FROM WEATHER AND OTHER ELEMENTS</u> 1. <u>EXTERIOR PROTECTION</u> a. Exterior elements which structure should resist and provide to occupants</p>	<ul style="list-style-type: none"> ◦ weather-tight ◦ water-tight ◦ damp-free ◦ decay ◦ private to occupants 	<ul style="list-style-type: none"> ◦ weather resistant 	<ul style="list-style-type: none"> ◦ weather resistant ◦ exclude dampness
<p>C. <u>EARTHQUAKE HAZARD REDUCTION</u> 1. <u>SEISMIC REDUCTION</u> a. Provides for evaluation and strengthening to resist earthquake forces</p>			<ul style="list-style-type: none"> ◦ per Building Code <u>2/</u>
<p>D. <u>PROTECTION FROM TERMITES, DECAY, ETC.</u> 1. <u>PREVENTIVE MEASURES</u> a. Provide for protection against infestation, decay, etc.</p>		<ul style="list-style-type: none"> ◦ YES - exterior surfaces - treat with paint or preservative 	<ul style="list-style-type: none"> ◦ YES - protect wood per Building Code <u>2/</u>

NOTES:

1/ refers to State Building Construction Code (New York State Division of Housing and Community Renewal)

2/ refers to Uniform Building Code (ICBO)

STRUCTURAL REQUIREMENTS - Summary Comparison of Provisions (Cont.)

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

<ul style="list-style-type: none"> ° show no evidence of deterioration ° capable of carrying loads under normal use 	<ul style="list-style-type: none"> ° show no evidence of deterioration ° capable of carrying imposed loads ° special provision for heavy loads in non-residential occupancies 	<ul style="list-style-type: none"> ° exist or restore to a sound condition 	<ul style="list-style-type: none"> ° sound condition and serviceable for expected useful life ° repair or replace to original sound condition
	<ul style="list-style-type: none"> ° Protect occupants from environment ° promote health and safety 	<ul style="list-style-type: none"> ° weather-tight 	<ul style="list-style-type: none"> ° corrosion ° decay ° resistance to the elements ° reasonable durability ° economy of maintenance
			<ul style="list-style-type: none"> ° YES 3/ - condition assessment - necessary strengthening of connections and structural elements
<ul style="list-style-type: none"> ° YES - exterior wood surface - treat with paint or preservative 	<ul style="list-style-type: none"> ° YES - structural members - free of deterioration - prevent decay, deterioration in basement and crawl spaces 		<ul style="list-style-type: none"> ° YES - inspect for termite infestation - correct any structural damage

NOTES:

3/ In Seismic Zone 3 of Seismic Risk maps contained in HUD's Minimum Property Standards (HUD 4900.1 and 4910.1)

STRUCTURAL REQUIREMENTS - Summary Comparison of Provisions (Cont.)

SUBJECT MATTER	APHA-CDC RECOMMENDED HOUSING MAINTENANCE AND OCCUPANCY ORDINANCE, 1975 REV.	NEW YORK STATE MODEL HOUSING CODE, 1974	UNIFORM HOUSING CODE, 1979 EDITION (ICBO)
E. EXTERIOR STRUCTURAL ELEMENTS			
1. FOUNDATIONS			
a. Requirements for foundations		° maintain so that water does not penetrate	° noncompliance leads to substandard building 4/
2. EXTERIOR WALLS			
a. Requirements for exterior walls			
3. ROOFS			
a. Requirements for roofs	° proper drainage of storm water	° maintain in watertight condition	° if defective or unable to carry load, leads to substandard building 4/
4. APPURTENANCES/DECORATIVE FEATURES			
a. Contains provisions on structural safety of appurtenances and other building features	° YES - safe to use - structurally sound	° YES - maintained safe and sound	

NOTES:
4/ by definition

STRUCTURAL REQUIREMENTS - Summary Comparison of Provisions (Cont.)

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

<ul style="list-style-type: none"> ° capable of supporting load ° maintain in safe manner 	<ul style="list-style-type: none"> ° capable of supporting loads ° free from cracks and breaks 		<ul style="list-style-type: none"> ° support for all loads ° prevent entrance of water ° repair defects
<ul style="list-style-type: none"> ° free of holes, breaks, etc. ° not admit dampness ° siding kept in good repair 	<ul style="list-style-type: none"> ° free of holes, breaks, etc. ° not admit dampness ° maintain weatherproofed ° surface coated to prevent deterioration 		<ul style="list-style-type: none"> ° repair or replace defective walls ° walls to be free of holes, breaks, etc.
<ul style="list-style-type: none"> ° structurally sound ° maintained watertight 	<ul style="list-style-type: none"> ° structurally sound ° maintained watertight ° adequate drainage 	<ul style="list-style-type: none"> ° roof drainage per applicable code 	<ul style="list-style-type: none"> ° watertight ° durable ° dispose of water ° flashing required ° repair to new construction standards
<ul style="list-style-type: none"> ° YES - safe to use - capable of supporting load 	<ul style="list-style-type: none"> ° YES - proper anchorage - maintain in a safe condition - protect against decay by protective treatments 		<ul style="list-style-type: none"> ° YES - remove deteriorated or uneconomical structures

STRUCTURAL REQUIREMENTS - Summary Comparison of Provisions (Cont.)

SUBJECT MATTER	APHA-CDC RECOMMENDED HOUSING MAINTENANCE AND OCCUPANCY ORDINANCE, 1975 REV.	NEW YORK STATE MODEL HOUSING CODE, 1974	UNIFORM HOUSING CODE, 1979 EDITION (ICBO)
<p>F. <u>INTERIOR SPACE DIVIDERS</u> 1. <u>FLOORS, WALLS, CEILINGS</u> a. Requirements for floors, walls, ceilings</p>		<ul style="list-style-type: none"> ◦ Protect and maintain to resist deterioration ◦ laundry and bathroom floors to be watertight ◦ eliminate peeling paint, etc. 	<ul style="list-style-type: none"> ◦ defective or unsafe conditions lead to substandard building 4/
<p>G. <u>THERMAL PROTECTION</u> 1. <u>INSULATION FOR HEATED AREAS</u> a. Provides for specific measures for minimum thermal protection</p>			
<p>H. <u>ACCESSORY STRUCTURES</u> 1. <u>STRUCTURAL CONDITION</u> a. Requirements for accessory structures not integral to dwelling</p>	<ul style="list-style-type: none"> ◦ structurally sound ◦ maintained in good repair ◦ weather resistant 		

NOTES:
 4/ by definition

STRUCTURAL REQUIREMENTS - Summary Comparison of Provisions (Cont.)

STANDARD HOUSING CODE, 1979 EDITION (SBCCI)	BASIC PROPERTY MAINTENANCE CODE, 1978 EDITION (BOCA)	CODE ENFORCEMENT GUIDELINES FOR RESIDENTIAL REHABILITATION (BOCA)	HUD 4940.4, MINIMUM STANDARDS FOR REHABILITATION FOR RESIDENTIAL PROPERTIES, FEB. 1978
<ul style="list-style-type: none"> ° capable of supporting load ° maintained in sound condition ° kitchen and bathroom floor to be substantially watertight 	<ul style="list-style-type: none"> ° maintain in good condition ° eliminate peeling paint, etc. ° kitchen and bathroom floors to be substantially watertight 	<ul style="list-style-type: none"> ° specific provisions for floors in rehabilitated buildings ° finish surfaces of walls and ceilings 	<ul style="list-style-type: none"> ° specific provisions for floors and partitions in rehabilitated buildings ° finish surfaces of walls and ceilings ° special provisions in housing for the elderly
			<ul style="list-style-type: none"> ° YES - ceiling insulation - floor insulation - wall insulation
<ul style="list-style-type: none"> ° structurally sound ° maintained in good repair 			<ul style="list-style-type: none"> ° remove deteriorated or uneconomical structures

10. COMPARISON OF SPACE, OCCUPANCY AND FACILITY REQUIREMENTS

A. Extent of Coverage

The code provisions within this section of the comparison are primarily intended to set maximum density standards within dwellings and to prescribe minimum kitchen, bathroom and laundry equipment and facilities that are intended to fulfill the basic sanitary needs of occupants. Generally, occupant density is indirectly established by requiring a specific minimum floor area for habitable rooms along with spaces for other domestic activities (sleeping, cooking, etc.) or in some cases it is based on number of habitable rooms per dwelling unit. Another method is a restriction on the number of basic families or occupants and guests permitted within any one dwelling unit. Other spatial factors covered include requirements for minimum ceiling heights, storage space, etc.

All of the code documents examined have specific spatial and basic equipment requirements in this category of the comparative analysis. It is probably the one area of comparison in this study where there is a great deal of similarity among the codes with some provisions while with others provisions in this subject area considerable differences exist.

* The summary comparison charts related to Space, Occupancy and Facility Requirements immediately follow this discussion on pp. 25. Appendix B at the rear of this report contains the actual (or in some cases abstracted) code provisions along with the appropriate source citation.

B. Significant Findings

B.1 Among Housing Codes

Occupancy of dwelling units based on total habitable room floor area determines total number of occupants allowed according to the provisions for three of the housing codes (APHA-CDC Recommended Housing Maintenance and Occupancy Ordinance, Standard Housing Code, and Basic Property Maintenance Code). The amount of floor space required in habitable rooms is 150 square feet for the first person and 100 square feet for each additional person in each of these three codes. The other two housing codes, New York State Model Housing Code and the Uniform Housing Code, based on their provisions on the premise that a dwelling unit must have at least one habitable room and such habitable room must have a minimum floor area of 150 square feet irregardless of number of occupants. These two approaches at determining dwelling unit occupancy standards and spatial values are a major departure in regulatory intent among the housing codes. These approaches along with many other values established by these code provisions exemplify the arbitrary approach of establishing what amounts to irrational values for housing requirements. These two codes also specify a minimum horizontal dimension for the habitable room, but one specifies ten feet dimension and the other a minimum dimension of seven feet. The other three codes do not cover minimum horizontal dimensions for their habitable rooms.

Rooms to be used for sleeping purposes also have minimum floor area requirements. These apply presumably when the dwelling unit contains more than one required habitable room, but this is not clear in the descriptive format of the codes. These floor areas are also prescribed on the basis of number of occupants except in the case of the New York State Model Housing Code where 80 square feet is assumed (due to lack of clarity) to apply to

sleeping rooms regardless of number of occupants. The other codes specify an area of 70 square feet for the first occupant, except the Uniform Housing Code which allows two occupants in the same 70 square foot room. Minimum horizontal dimensions of seven feet for sleeping rooms are given by only two codes (New York State Model Housing Code and Uniform Housing Code).

The housing codes treat kitchen areas with considerable variation. Some codes (Uniform Housing Code, Standard Housing Code) do not have a specific floor area requirement while the APHA-CDC Recommended Housing Maintenance and Occupancy Ordinance simply states that an "area adequate for circulation and required equipment" be provided. The New York State Model Housing Code requires a minimum floor area of 60 square feet with a minimum horizontal dimension of seven feet for kitchens. The Basic Property Maintenance Code requires a kitchen area of 50 square feet for the first five occupants and 60 square feet for six or more occupants.

Ceiling height requirements for habitable rooms also differ among the provisions examined. Two codes have a seven feet minimum, two specify 7-1/2 feet, and another requires 7-1/3 feet. There is agreement among four of the five codes on the minimum fraction of floor area and clear ceiling height for rooms with sloping ceilings to qualify as habitable rooms. All specify that at least one-half of the floor area of such rooms must meet the minimum ceiling height requirement; but the Basic Property Maintenance Code reduces the fractional floor area requirement to one third of the area. The codes are consistent in disallowing any portion of the room with ceiling heights less than five feet from being considered as part of the required area for habitable space.

Only the APHA-CDC Recommended Housing Maintenance and Occupancy Code gives any consideration to requiring

storage space in the dwelling. All the housing codes, except the Uniform Housing Code, address the possible use of rooms below grade to be recognized as habitable space. There is some variation and inconsistencies in the conditions by which each of these four codes allow or restrict the use of such spaces for habitable rooms.

Certain dwelling unit limitations on the physical arrangement of spaces for privacy and restricting access to or through bathrooms and sleeping rooms are given for four of the housing codes. The provisions are generally consistent but have some minor variations (e.g., two of the four address separation of dwelling units and the other two do not). The Uniform Housing Code does not cover this subject at all. The Uniform Housing Code, however, is the only code to provide for an exception in its provisions to cover the special space requirements of efficiency type living units in apartment houses.

Some of the codes have additional criteria on limiting the number of occupants in a dwelling unit to prevent overcrowded and unsafe conditions. The APHA-CDC Recommended Housing Maintenance and Occupancy Ordinance stipulates that the maximum occupancy be based either on family size or number of habitable rooms.

The New York State Model Housing Code has graduated occupancy limitations based on total floor area of habitable rooms as does the Basic Property Maintenance Code which provides a tabular breakdown of number of people allowed per the floor areas of various rooms (i.e., living, dining, kitchen, bedrooms). Only two of the codes, the New York State Model Housing Code and the Basic Property Maintenance Code contain specific restrictions which disallow kitchens to be used as sleeping rooms. The New York State Model Housing Code also prohibits the use of cellars as habitable space and prohibits certain objectionable home occupants (e.g., those which produce offensive noise vibration, smoke, dust, odor, heat, or other objectionable effects).

The basic facilities and equipment covered by the housing codes include primarily the kitchen and bathroom plumbing fixtures and other amenities. The codes were consistent in the installed plumbing equipment required for bathrooms, but the coverage for kitchen facilities varied significantly. Two codes, the Uniform Housing Code and the Basic Property Maintenance Code, only required a sink, the Standard Housing Code a sink and stove, and the other two stipulating sink, stove, refrigerator and even cabinets and countertops in the case of the APHA-CDC Recommended Housing Maintenance and Occupancy Ordinance. This latter code was the only one that also required a safe storage area for drugs and poisons.

B.2 Between Rehabilitation Guidelines

The two rehabilitation guideline documents treat the spatial requirements of habitable rooms, sleeping rooms, and kitchens differently. In the Code Enforcement Guidelines for Residential Rehabilitation, the minimum floor areas are left up to those prescribed by local regulations. The HUD Minimum Standards for Rehabilitation for Residential Properties sets its minimum room areas based on the number of bedrooms in living units. These minimum room spaces are given for subdividing space in existing buildings or for the construction of new rooms. The HUD provisions also allow for acceptance of unremodeled existing rooms where they are considered of adequate size and arrangement for the intended function by proper authorities.

The two rehabilitation guideline documents treat the issue of minimum ceiling heights somewhat differently. The HUD document proposes that the ceiling heights be such that they will permit the average person to move about comfortably and create no unpleasant sensation and suggests as a guide that minimum heights be 7-1/2 feet.

The Code Enforcement Guidelines for Residential Rehabilitation prescribes a minimum of seven feet.

The two documents are in apparent conflict on the issue of recognizing a portion of those spaces with sloping ceilings as habitable rooms if they satisfy some minimum fractional floor area criteria regarding clear ceiling height. The HUD Minimum Standards do not provide for such situations, which are quite common in existing buildings, while the Code Enforcement Guidelines document follows the pattern of most of the housing codes by requiring at least one-half of the floor area to meet the minimum clear ceiling height requirement.

Both of the rehabilitation guideline documents have provisions requiring space be provided for closets and storage in dwellings. They each also address the situation of allowing space below grade to be used as habitable rooms. The rehabilitation guidelines are not as flexible in their treatment for such allowance as are the housing codes. They both require such space to satisfy all the requirements for normal habitable rooms - particularly with regard to the light and ventilation requirements in the case of the HUD Minimum Standards.

The two rehabilitation guidelines generally agree on the treatment of privacy and physical arrangement of spaces and units. They also are generally in accord on their respective provisions for space and utility hook-up for kitchen and bathroom equipment and facilities and that separate space be provided for laundry facilities. In housing for the elderly, the HUD Minimum Standards has additional accessibility and equipment requirements for kitchens and bathrooms.

B.3 Between Housing Codes and Rehabilitation Guidelines

Compared to all other code disciplines or subjects, both classes of code document devote most of the content of

their provisions to this subject area. Overall, there are several areas of the comparison where dissimilarities are prevalent (e.g., spatial criteria, storage space) or where requirements exist for the rehabilitation guidelines but are not considered by the housing codes. The opposite is also true--some of the housing code requirements are not covered in the rehabilitation guideline documents (e.g., prohibited uses, efficiency living units). The depth and extent of the differences are not that significant when considered in light of the different purposes of the two classes of documents, however.

TABLE 3

SPACE, OCCUPANCY AND FACILITY REQUIREMENTS - SUMMARY COMPARISON OF PROVISIONS

SPACE, OCCUPANCY AND FACILITY REQUIREMENTS -
Summary Comparison of Provisions

APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.

NEW YORK STATE MODEL
HOUSING CODE,
1974

UNIFORM HOUSING CODE,
1979 EDITION (ICBO)

SUBJECT MATTER

<p>A. SPATIAL REQUIREMENTS 1. HABITABLE ROOMS a. Minimum floor area (sq. ft.) for habitable rooms in dwelling unit</p>	<p>° 150 for first occupant ° 100 for every additional occupant <u>1/</u> <u>2/</u></p>	<p>° at least one habitable room per dwelling with minimum 150 sq. ft. floor area</p>	<p>° at least one habitable room per dwelling unit with minimum 150 sq. ft. floor area</p>
<p>b. Minimum horizontal room dimension (ft.)</p>		<p>° 10 ft.</p>	<p>° 7 ft.</p>
<p>2. SLEEPING ROOMS a. Minimum floor area (sq. ft.) for rooms occupied for sleeping purposes</p>	<p>° 70 for first occupant ° 50 for every additional occupant <u>4/</u></p>	<p>° 80 ft. <u>5/</u></p>	<p>° 70 for first and second occupant ° 50 for every additional occupant</p>
<p>b. Minimum horizontal room dimension (ft.)</p>		<p>° 7 ft.</p>	<p>° 7 ft.</p>
<p>3. KITCHENS a. Minimum floor area (sq. ft.) for kitchen</p>	<p>° area adequate for circulation and required equipment <u>6/</u> <u>7/</u></p>	<p>° 60 ft.</p>	<p>° provide a kitchen <u>7/</u></p>

NOTES:

1/ provision, also used as alternate method for determining maximum occupancy of dwelling

2/ floor space to be calculated on the basis of total habitable room area

4/ applies to dwelling units of two or more rooms

5/ assumed to apply to sleeping rooms

6/ may be separated room or portion of a room

7/ no minimum floor area given

**SPACE, OCCUPANCY AND FACILITY REQUIREMENTS -
Summary Comparison of Provisions (Cont.)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

<ul style="list-style-type: none"> ° 150 for first occupant ° 100 for every additional occupant <u>2/</u> 	<ul style="list-style-type: none"> ° 150 for first occupant ° 100 for every additional occupant <u>2/</u> 	<ul style="list-style-type: none"> ° minimum area as required by local code or ordinance 	<ul style="list-style-type: none"> ° space necessary for suitable living, sleeping, cooking, and dining ° 140 sq. ft. living room for 1 & 2 bedroom units <u>3/</u> ° 150 sq. ft. living room for 3 or more bedroom units <u>3/</u>
			<ul style="list-style-type: none"> ° 10 ft <u>3/</u>
<ul style="list-style-type: none"> ° 70 for first occupant ° 50 for every additional occupant 	<ul style="list-style-type: none"> ° 70 for first occupant ° 50 for every additional occupant 	<ul style="list-style-type: none"> ° minimum area as required by local code or ordinance 	<ul style="list-style-type: none"> ° 70 for single bed <u>3/</u> ° 110 for double bed <u>3/</u>
			<ul style="list-style-type: none"> ° 7 ft. for single bed <u>3/</u> ° 8 2/3 ft. for double bed <u>3/</u>
<ul style="list-style-type: none"> ° provide a kitchen area <u>7/</u> 	<ul style="list-style-type: none"> ° 50 for 1 to 5 occupants ° 60 for 6 or more occupants 	<ul style="list-style-type: none"> ° minimum area as required by local code or ordinance 	<ul style="list-style-type: none"> ° 50 for 1 & 2 bedroom units <u>3/</u> ° 60 for 3 or more bedroom units <u>3/</u>

NOTES:

2/ floor space to be calculated on the basis of total habitable room area

3/ room sizes are minimum for subdividing of existing spaces or for construction of new rooms. Un remodeled existing rooms where considered of adequate size and arrangement for the intended function by the proper authority are acceptable.

7/ no minimum floor area given

**SPACE, OCCUPANCY AND FACILITY REQUIREMENTS -
Summary Comparison of Provisions (Cont.)**

**APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.**

**NEW YORK STATE MODEL
HOUSING CODE,
1974**

**UNIFORM HOUSING CODE,
1979 EDITION (ICBO)**

SUBJECT MATTER	APHA-CDC RECOMMENDED HOUSING MAINTENANCE AND OCCUPANCY ORDINANCE, 1975 REV.	NEW YORK STATE MODEL HOUSING CODE, 1974	UNIFORM HOUSING CODE, 1979 EDITION (ICBO)
b. Minimum horizontal room dimension (ft.)		° 7 ft.	
4. <u>CEILING HEIGHTS</u> a. Minimum required ceiling height for habitable rooms	° 7 ft.	° 7 1/2 ft.	° 7 1/2 ft. ^{3/} ° 7 ft. for kitchens, halls, bath-rooms ^{8/}
b. Minimum floor area and ceiling height for habitable rooms with sloping ceiling	° 1/2 of floor area to be minimum height ° heights less than 5 ft. not considered	° 1/2 of floor area to be minimum height ° heights less than 5 ft. not considered	° 1/2 of floor area to be minimum height ° heights less than 5 ft. not considered
5. <u>STORAGE SPACE</u> a. Minimum space requirement for closets and storage	° floor area of 4 sq. ft. of floor -to-ceiling height per occupant		
6. <u>HABITABLE ROOMS BELOW GRADE</u> a. Restrictions on use of space below grade for habitable rooms	° up to 4 ft. or less below grade ° subject to approval of authorities	° floor level no more than 4 ft. below grade ° conform to definition of "base-ment"	

NOTES:

^{3/} room sizes are minimum for subdividing of existing spaces or for construction of new rooms. Un remodeled existing rooms where considered of adequate size and arrangement for the intended function by the proper authority are acceptable.

^{8/} spacing of exposed beam ceiling members determines method of measurement

SPACE, OCCUPANCY AND FACILITY REQUIREMENTS -
Summary Comparison of Provisions (Cont.)

HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978

STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)

BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)

CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)

			° 5 1/3 ft. <u>3/</u>
° 7 ft.	° 7 1/3 ft.	° 7 ft.	° permit average person to move about comfortably (Guide suggest 7 1/2 ft.)
° 1/2 of floor area to be minimum height ° heights less than 5 ft. not considered	° 1/3 of floor area to be minimum of 7 ft. <u>9/</u> ° heights less than 5 ft. not considered <u>9/</u>	° 1/2 of floor area to be minimum height ° heights less than 5 ft. not considered	° suggests that no portion of ceiling be less than 7 ft.
		° 100 cubic ft. per dwelling unit	° closet space in bedrooms ° general storage for each living unit
° floor and walls impervious to leakage ° window areas meet light and ventilation requirement ° window area above grade ° openable window area	° floors and walls to be watertight ° window area, openable area and ceiling height in compliance ° window area above grade	° satisfy all code requirements for habitable rooms	° satisfy same standards as for rooms above grade - particularly w/r to light and ventilation requirements

NOTES:

3/ room sizes are minimum for subdividing of existing spaces or for construction of new rooms. Unremodeled existing rooms where considered of adequate size and arrangement for the intended function by the proper authority are acceptable.

9/ applicable to attics or top half-stories

**SPACE, OCCUPANCY AND FACILITY REQUIREMENTS -
Summary Comparison of Provisions (Cont.)**

**APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.**

**NEW YORK STATE MODEL
HOUSING CODE,
1974**

**UNIFORM HOUSING CODE,
1979 EDITION (ICBO)**

SUBJECT MATTER

<p>B. <u>PHYSICAL ARRANGEMENT OF SPACES</u> 1. <u>PRIVACY /COMMON ACCESS</u> a. Contains provisions on privacy, common access and separation of units</p>	<ul style="list-style-type: none"> ° YES - privacy - common access 	<ul style="list-style-type: none"> ° YES - privacy - common access - separation of units 	
<p>2. <u>EFFICIENCY LIVING UNITS</u> a. Contains provisions for efficiency type living units</p>			<ul style="list-style-type: none"> ° YES - for efficiencies within an apartment house
<p>C. <u>OCCUPANCY LIMITATIONS</u> 1. <u>MAXIMUM OCCUPANCY</u> a. Contains provisions that limit occupancy or prevent overcrowding</p>	<ul style="list-style-type: none"> ° YES - maximum occupancy per dwelling unit 	<ul style="list-style-type: none"> ° Yes - based on size of habitable rooms 	<ul style="list-style-type: none"> ° LIMITED - defines substandard building
<p>2. <u>PROHIBITED USES</u> a. Specifically restricts certain uses</p>		<ul style="list-style-type: none"> ° YES - sleeping in kitchen, etc. - cellar space as habitable rooms - certain home occupations 	
<p>D. <u>BASIC FACILITIES AND EQUIPMENT</u> 1. <u>KITCHEN</u> a. required kitchen facilities</p>	<ul style="list-style-type: none"> ° sink ° cabinets/shelves ° countertop or table ° stove ° refrigerator 	<ul style="list-style-type: none"> ° sink ° stove ° refrigerator <u>11/</u> ° other <u>12/</u> 	<ul style="list-style-type: none"> ° sink

NOTES:

11/ prohibits use of water-cooled gas refrigerator installations

12/ provides specific kitchen equipment requirements for communal kitchens

SPACE, OCCUPANCY AND FACILITY REQUIREMENTS -
Summary Comparison of Provisions (Cont.)

HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978

STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)

BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)

CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)

<ul style="list-style-type: none"> ° YES - privacy - common access 	<ul style="list-style-type: none"> ° YES - privacy - common access - separation of units 	<ul style="list-style-type: none"> ° YES - privacy - common access 	<ul style="list-style-type: none"> ° YES - privacy - common access - separation of units
<ul style="list-style-type: none"> ° LIMITED - prohibits use based on code compliance 	<ul style="list-style-type: none"> ° YES - maximum occupancy - overcrowding 	<ul style="list-style-type: none"> ° LIMITED - based on building size and light and ventilation 	<ul style="list-style-type: none"> ° LIMITED
		<ul style="list-style-type: none"> ° YES - sleeping in kitchen, etc. 	
<ul style="list-style-type: none"> ° sink ° stove 	<ul style="list-style-type: none"> ° sink 	<ul style="list-style-type: none"> ° sink ° countertop ° stove <u>10/</u> ° refrigerator <u>10/</u> 	<ul style="list-style-type: none"> ° sink ° countertop ° stove <u>10/</u> ° refrigerators <u>10/</u> ° other <u>13/</u>

NOTES:

10/ provide space and required utility hook-up for installation of such appliances

13/ provides additional requirements for housing units for the elderly

SPACE, OCCUPANCY AND FACILITY REQUIREMENTS -
Summary Comparison of Provisions (Cont.)

SUBJECT MATTER	APHA-CDC RECOMMENDED HOUSING MAINTENANCE AND OCCUPANCY ORDINANCE, 1975 REV.	NEW YORK STATE MODEL HOUSING CODE, 1974	UNIFORM HOUSING CODE, 1979 EDITION (ICBO)
-----------------------	--	--	--

<p>2. <u>BATHROOM</u> a. Required bathroom facilities</p>	<ul style="list-style-type: none"> ◦ flush water closet ◦ lavatory sink ◦ bathtub or shower 	<ul style="list-style-type: none"> ◦ water closet ◦ lavatory ◦ bathtub or shower 	<ul style="list-style-type: none"> ◦ water closet ◦ lavatory ◦ bathtub or shower
<p>3. <u>LAUNDRY, UTILITY AND OTHER FACILITIES</u> a. Specifically requires other types of facilities</p>	<ul style="list-style-type: none"> ◦ YES - safe storage of drugs and poisons 		

**SPACE, OCCUPANCY AND FACILITY REQUIREMENTS -
Summary Comparison of Provisions (Cont.)**

STANDARD HOUSING CODE, 1979 EDITION (SBCCI)	BASIC PROPERTY MAINTENANCE CODE, 1978 EDITION (BOCA)	CODE ENFORCEMENT GUIDELINES FOR RESIDENTIAL REHABILITATION (BOCA)	HUD 4940.4, MINIMUM STANDARDS FOR REHABILITATION FOR RESIDENTIAL PROPERTIES, FEB. 1978
<ul style="list-style-type: none"> ° water closet ° lavatory ° bathtub or shower ° other <u>14/</u> 	<ul style="list-style-type: none"> ° water closet ° lavatory ° bathtub or shower 	<ul style="list-style-type: none"> ° water closet ° lavatory ° bathtub or shower 	<ul style="list-style-type: none"> ° water closet ° lavatory ° bathtub or shower ° other <u>13/</u>
		<ul style="list-style-type: none"> ° YES - laundry facilities 	<ul style="list-style-type: none"> ° YES - laundry facilities

NOTES:

13/ provides additional requirements for housing units for the elderly

14/ contains additional requirements regarding privacy, accessibility and minimum floor area of bathroom

11. COMPARISON OF WINDOWS AND DOORS*

A. Extent of Coverage

As a separate building element, windows and doors do not receive extensive coverage with regard to such factors as exterior protection, energy conservation, maintenance of glazing or physical security among the codes studied except for the HUD Rehabilitation Standards. This may result from the fact that windows and other exterior openings are subject to other interrelated code requirements and considerations. Certain of these other provisions bearing on windows, doors, and other exterior openings are summarized in other accompanying comparison tables. These include the tables on requirements for natural light (see pp. 63), natural ventilation (see pp. 71), and means of egress/exits (see pp. 55). The Uniform Housing Code does not address any of the provisions on windows and doors compared in this summary chart and the New York State Model Housing Code covers only one issue (i.e., weathertightness) superficially. The Code Enforcement Guidelines for Residential Rehabilitation coverage is limited to sizes of doors and scuttle openings. It specifically does not address any of the other issues on windows covered by this part of the analysis. None of the codes had a major section or subsection of their content devoted exclusively to windows and doors. The provisions on windows and doors that are compared in this chart were

* The summary comparison charts relating to Windows and Doors immediately follow this discussion on pp. 37. Appendix C at the rear of this report contains the actual (or in some cases abstracted) code provisions along with the appropriate source citation.

included under a mix of other headings (e.g., "Structural," "Safe and Sanitary Maintenance," etc.) within the organization and content of the various codes.

B. Significant Findings

B.1 Among Housing Codes

The major concern of the APHA-CDC Recommended Housing Ordinance is on health and sanitation by requiring screens on openings to exclude insects while the Standard Housing Code and the Basic Property Maintenance Code cover protection from wind, rain, water and other weather elements as well as entry of rodents. While some of the codes specify locking devices for exterior doors, the Basic Property Maintenance Code is the only one of the codes that requires exit doors to be easily opened from the inside without a key for emergency egress.

It appears that the approach and extent of coverage provided by the Standard Housing Code and the Basic Property Maintenance Code in the treatment of this building element is quite similar, with the latter being a bit more extensive regarding exterior protection (particularly regarding basement windows and hatchways) and physical security.

B.2 Between Rehabilitation Guidelines

The Code Enforcement Guidelines for Residential Rehabilitation limits itself to size of doors and dimensions of scuttle openings to attics or crawl spaces whereas the HUD Rehabilitation Standards covers thermal protection, glazing, security, and some general guidance on making decisions for existing windows and doors. The minimum door heights and minimum access opening of scuttles suggested by each code differ as follows:

	<u>Code Enforcement Guidelines for Rehabilitation</u>	<u>HUD Rehabilitation Standards</u>
Minimum Door Height	6' 8"	6' 6"
Minimum Access Opening	18" x 22"	14" x 22"

It should be noted that in its performance context, the HUD Rehabilitation Standard requires openings to be of such a size so that furniture and equipment can fit through.

General agreement exists between the two codes on door widths, however, the HUD document includes separate minimum requirements for interior and exterior doors in housing for the elderly.

In other areas of coverage, the HUD Rehabilitation Standards requires various energy conservation measures during building rehabilitation for glazing and doors tailored to local climatic conditions in those areas having more than 4500 annual winter degree days. The U-values to be attained through such corrective measures are the same as for new construction in the particular region of the country.

The traditional health and sanitation issues (i.e., protection from insects, rodents, etc.) of windows and doors are not covered extensively in the rehabilitation guideline documents studies. The HUD Rehabilitation Standards give superficial treatment to the requirement for screens on openings.

B.3 Between Housing Codes and Rehabilitation Guidelines

The overall emphasis on the treatment of windows and doors appears to be significantly different between these two classes of documents. The housing codes are primarily concerned with health and sanitation from insect and rodent

entry and maintaining protection from the customary elements of weather. In contrast, the rehabilitation guidelines address minimum physical sizes of openings and the HUD document, in particular, stresses almost exclusively various measures for achieving thermal performance.

TABLE 4

WINDOWS AND DOORS - SUMMARY COMPARISON OF PROVISIONS

WINDOWS AND DOORS - Summary Comparison of Provisions

APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.

NEW YORK STATE MODEL
HOUSING CODE,
1974

UNIFORM HOUSING CODE,
1979 EDITION (ICBO)

SUBJECT MATTER

SUBJECT MATTER	APHA-CDC RECOMMENDED HOUSING MAINTENANCE AND OCCUPANCY ORDINANCE, 1975 REV.	NEW YORK STATE MODEL HOUSING CODE, 1974	UNIFORM HOUSING CODE, 1979 EDITION (ICBO)
<p>A. <u>WINDOWS, DOORS AND OTHER ACCESS OPENINGS</u> 1. <u>EXTERIOR PROTECTION/WEATHER-PROOFING</u> a. Exterior elements which doors and windows should preclude from entering dwelling</p>	<ul style="list-style-type: none"> ◦ insects 1/ 	<ul style="list-style-type: none"> ◦ weather 	
<p>b. Means of accomplishing protection</p>	<ul style="list-style-type: none"> ◦ construction ◦ screens ◦ self-closing devices 	<ul style="list-style-type: none"> ◦ maintain weathertight 	
<p>2. <u>THERMAL PROTECTION</u> a. Provides for specific measures for minimum thermal protection</p>			
<p>3. <u>GLAZING</u> a. Requires undamaged glazing</p>			

NOTES:

1/ exclude insects during that portion of the year when there is need for protection

WINDOWS AND DOORS - Summary Comparison of Provisions (Cont.)

HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978

STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)

BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)

CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)

<ul style="list-style-type: none"> ° weather ° water ° rodents ° wind 	<ul style="list-style-type: none"> ° rain ° wind ° rodents <u>2/</u> ° surface water <u>2/</u> 		<ul style="list-style-type: none"> ° reduce air infiltration
<ul style="list-style-type: none"> ° maintenance ° proper fit 	<ul style="list-style-type: none"> ° construction ° maintenance ° proper fit ° weather-stripping ° rodent-proof shields <u>2/</u> ° storm windows <u>2/</u> 		<ul style="list-style-type: none"> ° weather-stripping ° caulking
			<ul style="list-style-type: none"> ° YES <u>3/</u> - storm doors - storm windows - insects - insulating glass
<ul style="list-style-type: none"> ° YES - full glass or approved substitute 	<ul style="list-style-type: none"> ° YES - full glass 		<ul style="list-style-type: none"> ° YES - replace defective glass

NOTES:

2/ basement or cellar windows and hatchways

3/ applies for all habitable heated areas in locations having more than 4500 annual winter degree days

WINDOWS AND DOORS - Summary Comparison of Provisions (Cont.)

SUBJECT MATTER	APHA-CDC RECOMMENDED HOUSING MAINTENANCE AND OCCUPANCY ORDINANCE, 1975 REV.	NEW YORK STATE MODEL HOUSING CODE, 1974	UNIFORM HOUSING CODE, 1979 EDITION (ICBO)
4. <u>SCREENS</u> a. Requires screens and openings	<ul style="list-style-type: none"> ° YES - exterior doorways used for ventilation - windows below certain height - openings at ground level 		
5. <u>HARDWARE/PHYSICAL SECURITY</u> a. Covers hardware, physical security, locking devices for exterior openings	<ul style="list-style-type: none"> ° YES - locking devices for all exterior doors 		
6. <u>SIZE</u> a. Prescribes minimum sizes for doors, windows and other openings			
7. <u>EXISTING CONDITIONS</u> a. Provide guidance on repairs or replacement of existing doors and windows.			

WINDOWS AND DOORS - Summary Comparison of Provisions (Cont.)

STANDARD HOUSING CODE, 1979 EDITION (SBCCI)	BASIC PROPERTY MAINTENANCE CODE, 1978 EDITION (BOCA)	CODE ENFORCEMENT GUIDELINES FOR RESIDENTIAL REHABILITATION (BOCA)	HUD 4940.4, MINIMUM STANDARDS FOR REHABILITATION FOR RESIDENTIAL PROPERTIES, FEB. 1978
<ul style="list-style-type: none"> ° YES - exterior doors (with self-closing device) - all windows used for ventilation 	<ul style="list-style-type: none"> ° YES - doors and windows used for ventilation - not required above fifth floor - not for doors required to swing out 		<ul style="list-style-type: none"> ° YES - all windows, doors and other openings - does not apply in regions where customarily not needed
<ul style="list-style-type: none"> ° YES - hardware for windows that supply light and ventilation - proper hardware for exterior doors 	<ul style="list-style-type: none"> ° YES - hardware for windows - door locks in good repair - exit doors to be easily opened from inside without a key 		<ul style="list-style-type: none"> ° YES - locking devices on exterior doors, bath and toilet compartment doors. - replace defective locking mechanisms - window hardware
		<ul style="list-style-type: none"> ° YES - minimum dimensions given for <ul style="list-style-type: none"> ° interior and exterior doors ° scuttle to attic 	<ul style="list-style-type: none"> ° YES - adequate to admit furniture and equipment - interior and exterior doors 4/ - suggests min. sizes for other doors and access scuttles
			<ul style="list-style-type: none"> ° YES - suggests bases for making repair, replace or refinish determinations

NOTES:

4/ in housing for elderly, minimum door widths required

12. COMPARISON OF STAIRS, RAMPS, LANDINGS, PORCHES, BALCONIES*

A. Extent of Coverage

This segment of the comparative analysis covers those requirements that relate to the structural integrity, serviceability, and maintenance of stairs, ramps, and landings; the need for handrails and guardrails to prevent falls; and the condition of existing porches and other exterior appurtenances with regard to occupant safety. Only five of the seven codes involved in this comparison contained provisions specifically addressing these built elements. Of the two that do not have provisions, one, the Code Enforcement Guidelines for Residential Rehabilitation, requires conformity to the building code requirements for new construction and another, the Uniform Housing Code, does not address these subjects at all.

In the organizational format of the various codes, the subject matter on stairs, ramps, landings, porches, and balconies can be found in a number of different places. Some treat it in the section on basic structural provisions, others are inclined toward treating parts of the subject with the requirements on exits or means of egress and one includes it with the spatial aspects of building planning and layout. For purposes of this study the relevant provisions dealing with structural condition, maintenance, and serviceability have been consolidated as a separate subject. Some inter-

* The summary comparison charts relating to Stairs, Landings, Porches, Balconies immediately follow this discussion on pp. 45. Appendix D at the rear of this report contains the actual (or in some cases abstracted) code provisions along with the appropriate source citation.

related aspects dealing with emergency egress may also be included in the summary comparison tables on "Means of Egress/Exits" found on pp. 55 of this report.

B. Significant Findings

B.1 Among Housing Codes

The four housing codes that have provisions dealing with stairways generally require that they provide safe ascent and descent and be capable of supporting the load normally imposed on them and be kept in good repair. No minimum stair or landing widths are specified. The requirements generally apply to both inside and outside stairways. Only the APHA-CDC Recommended Housing Maintenance and Occupancy Ordinance specifically requires riser/tread uniformity throughout the run of the stair. The Basic Property Maintenance Code makes reference to the building code on matters of stair and exit facilities. It also requires replacement of worn treads and risers. The New York State Model Housing Code simply requires that the treads, risers, and landings be arranged and proportioned to provide safe ascent and descent. This code also covers stairway access to roofs by means of scuttles and requires that the door be readily openable from the interior without the use of a key or other tools.

The codes in general require structurally sound handrails and guardrails be used where needed to keep occupants from falling from such areas as open landings and stairs. Some variation was noted among the codes on handrail requirements and guardrail heights as indicated by the following data:

	<u>Minimum No. of Steps Requiring Handrails</u>	<u>Maximum Height Above Adjacent Area for Guardrails At Open Spaces</u>
APHA/CDC Recommended Ordinance	4 risers or more	36 inches
NY State Model Housing Code	one side of all stairways	all open portions
Standard Housing Code	4 risers or more	30 inches
Basic Property Maintenance Code	3 risers or more	30 inches
Uniform Housing Code	-- no requirements given --	

Only the New York State Model Housing Code specifies a minimum height above the landing or the stairway tread for handrails or guardrails. Both the Standard Housing Code and the Basic Property Maintenance Code defer to the respective building code on the matter of handrail or guardrail location.

Specific provisions for railings or parapet walls on porches, roofs, ramps, etc., are given only in the New York State Model Housing Code.

Generally subjective provisions covering structural soundness and maintenance of porches and other exterior appurtenance are provided in four of the five housing codes.

B.2 Between Rehabilitation Guidelines

As indicated previously the Code Enforcement Guidelines for Residential Rehabilitation invoke new construction code

requirements for stairways while the HUD Minimum Design Standards provides general provisions on safety, headroom, and the performance requirement that the stairway space be adequate for the passage of furniture and equipment. The HUD Minimum Design Standards also has special provisions for stairways in buildings required to be accessible to the physically handicapped and requires handrails for public stairs in compliance with ANSI A117.1 ("Making Buildings and Facilities Accessible to, and Usable by, the Physically Handicapped"). The HUD document also provides some general guidance on treating existing stairways in sound condition as well as the situation where new stairways are required to be constructed in conjunction with building refurbishment. The provisions are very general and provide no details for condition assessment or arriving at the most viable final determination. Deteriorated and economically unrepairable porches and other exterior appurtenances are also covered in a very general fashion by the HUD document.

B.3 Between Housing Codes and Rehabilitation Guidelines

Despite individual housing code variations, the code provisions on these built elements are more complete in their coverage than those given in the rehabilitation guidelines. Both sets of documents tend to refer to the building codes for new construction although such a reference is understandably more prevalent in the case of the rehabilitation guidelines.

TABLE 5

STAIRS, RAMPS, LANDINGS, PORCHES, BALCONIES - SUMMARY COMPARISON OF PROVISIONS

**STAIRS, RAMPS, LANDINGS, PORCHES, BALCONIES -
Summary Comparison of Provisions**

**APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.**

**NEW YORK STATE MODEL
HOUSING CODE,
1974**

**UNIFORM HOUSING CODE,
1979 EDITION (ICBO)**

SUBJECT MATTER	APHA-CDC RECOMMENDED HOUSING MAINTENANCE AND OCCUPANCY ORDINANCE, 1975 REV.	NEW YORK STATE MODEL HOUSING CODE, 1974	UNIFORM HOUSING CODE, 1979 EDITION (ICBO)
<p>A. <u>STAIRWAYS, RAMPS, LANDINGS</u> 1. <u>SAFETY AND SERVICEABILITY</u> a. Contains provisions on stairways, ramps, and landings</p>	<p>° YES - uniform risers and treads</p>	<p>° YES - risers, treads, landings - guardrails - handrails - roof access - maintenance of exterior stairs</p>	<p>-----</p>
<p>B. <u>HANDRAILS, GUARDRAILS</u> 1. <u>SAFETY AND SERVICEABILITY</u> a. Contains provisions on handrails or guardrails</p>	<p>° YES - structurally sound handrails - steps with 4 or more risers - porches, patios 3 ft. or higher than adjacent area</p>	<p>° YES - handrails at stairways - railings at balconies - railings to resist 50 lbs. per linear ft. - vehicle parking decks</p>	<p>-----</p>
<p>C. <u>PORCHES AND OTHER APPURTENANCES</u> 1. <u>SAFETY AND SERVICEABILITY</u> a. Contains provisions on porches and other appurtenances</p>	<p>° YES - safe to use - structurally sound</p>	<p>° YES - maintained safe and sound</p>	<p>-----</p>

STAIRS, RAMPS, LANDINGS, PORCHES, BALCONIES (Cont.)

- Summary Comparison of Provisions

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

<ul style="list-style-type: none"> ° YES - inside and outside stairs - support loads safely 	<ul style="list-style-type: none"> ° YES - support loads safely - replace worn treads and risers - conform to building code 	<ul style="list-style-type: none"> ° YES - conform to building code 	<ul style="list-style-type: none"> ° YES - adequate headroom - passage of furniture and equipment - requirements for handicapped - existing stairways in sound condition.
<ul style="list-style-type: none"> ° YES - railings on unenclosed area 30 inches higher than adjacent area - steps with 4 or more risers - sustain loads safely 	<ul style="list-style-type: none"> ° YES - steps with 3 or more risers - unenclosed areas 30 inches higher than adjacent area - firmly anchored to sustain loads 	<p align="center">-----</p>	<ul style="list-style-type: none"> ° YES - handrails on public stairs per ANSI A117.1
<ul style="list-style-type: none"> ° YES - safe to use - structurally sound 	<ul style="list-style-type: none"> ° YES - safe to use - structurally sound 	<p align="center">-----</p>	<ul style="list-style-type: none"> ° YES - remove deteriorated or uneconomical structures

13. COMPARISON OF FIRE PROTECTION/FIRE SAFETY REQUIREMENTS*

A. Extent of Coverage

This portion of the comparative analysis of code requirements presents an extreme contrast among the different code documents with respect to their treatment of fire prevention and related provisions. The coverage ranges from no provisions on the subject as in the case of the APHA-CDE Recommended Housing Ordinance to a number of rather extensive provisions in a separate section of the New York State Model Housing Code. The Basic Property Maintenance Code also has a separate article entitled "Fire Safety Requirements." The other four codes have a section on "Fire Protection", but they generally do not address the subject specifically; instead, they refer to local regulations or the appropriate building code requirements (or Minimum Property Standards in the case of the HUD document) for new construction.

It is interesting to note that the two codes with individual provisions on the subject designate the major section in which they are located as "Fire Safety Requirements," whereas the four codes that make direct reference to other regulations do so under a separate heading entitled "Fire Protection".

Generally, this subject area, regardless of terminology and code titles, is understood to encompass those construction and maintenance provisions necessary for the safeguarding of life and property from the hazards of fire and explosion due to the use or occupancy of buildings or premises.

* The summary comparison charts relating to Fire Protection/ Fire Safety Requirements immediately follow this discussion on pp. 49. Appendix E at the rear of this report contains the actual (or in some cases abstracted) code provisions along with the appropriate source citation.

None of the code documents examined had any provisions requiring that smoke detectors be installed in residences. Smoke detectors may be required by Fire Protection Codes where their installation can be mandated by local jurisdictions on a retroactive basis.

B. Significant Findings

B.1 Among Housing Codes

As indicated, the most extensive treatment of fire safety provisions is that offered by the New York State Model Housing Code, which actually approaches being a building code, followed by the Basic Property Maintenance Code. Fireplace safety and maintenance are specifically covered only by the New York State Model Housing Code. The Uniform Housing Code and the Standard Housing Code defer to local fire prevention codes or their respective model building code for specific requirements. No requirements are given in the APHA-CDE Recommended Housing Maintenance Ordinance relevant to fire protection or fire safety.

B.2 Between Rehabilitation Guidelines

Both documents refer to their respective requirements applicable to new construction for all fire prevention and fire safety criteria. The HUD Minimum Rehabilitation Standards allows alternate methods of protection when buildings cannot be rehabilitated in substantial conformance with the Minimum Property Standards, but does not elaborate further on such alternate methods.

B.3 Between Housing Code and Rehabiliations Guidelines

Except for two of the housing code documents, the majority of the provisions relative to fire protection and fire safety matters indicate that the requirements for new construction apply.

FIRE PROTECTION/FIRE SAFETY - Summary Comparison of Provisions

SUBJECT MATTER	APHA-CDC RECOMMENDED HOUSING MAINTENANCE AND OCCUPANCY ORDINANCE, 1975 REV.	NEW YORK STATE MODEL HOUSING CODE, 1974	UNIFORM HOUSING CODE, 1979 EDITION (ICBO)
<p>A. <u>APPLICABILITY/SCOPE</u> 1. <u>BASIS OF REQUIREMENTS</u> a. Code reference or general basis for min. requirement of fire safety provisions</p>	NONE	° buildings to be constructed and maintained to prevent fire hazards	° buildings to be provided with the degree of fire-resistive construction as required by the Building Code <u>1/</u>
<p>B. <u>FIRE SAFETY REQUIREMENTS</u> 1. <u>FIRE-RESISTANCE/FIRE SPREAD</u> a. Requires maintenance of fire-resistance ratings or separation of spaces</p>	NO	° YES - various components (walls, ceilings, etc.) - separation of mixed occupancies - floors above basements - hazardous areas - attached garages - exits	° YES <u>1/</u>
<p>2. <u>FIRE PROTECTION SYSTEMS AND EQUIPMENT</u> a. Requires maintenance of specific fire protection systems</p>	NO	° YES - fire extinguishers - sprinklers - self-closing doors	° YES - fire extinguishing systems <u>7/</u>
<p>3. <u>PROHIBITED CONDITIONS</u> a. Prohibits certain accumulations and storage conditions</p>	NO	° YES - hazardous materials - exit obstructions	NO

NOTES:

1/ refers to Uniform Building Code (ICBO)

7/ per Chapter 38 of the Uniform Building Code (ICBO)

FIRE PROTECTION/FIRE SAFETY - Summary Comparison of Provisions

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

<p>° buildings to comply with provisions of the fire prevention code <u>2/</u></p>	<p>° buildings to be constructed and maintained to prevent fire hazards in compliance with this code and the fire prevention code <u>3/</u></p>	<p>° rehabilitated residential buildings to comply with this code <u>4/</u> regarding the interior, built-in fire protection features</p>	<p>° to assure a high degree of safety to life and property - makes direct reference to HUD Minimum Property Standards <u>5/</u></p>
<p>° - <u>2/</u></p>	<p>° YES - various components (floors, walls, ceilings)</p>	<p>° YES - separation between dwelling and garage <u>6/</u> - flame spread of interior exposed surfaces <u>6/</u> - roof covering <u>6/</u></p>	<p>° YES - per Section 405-8 of the MPS <u>5/</u> - flame spread limitations</p>
<p>° - <u>2/</u></p>	<p>° YES - fire alarms - sprinklers - standpipes - fire extinguishers</p>	<p>° YES - per applicable requirements of local code</p>	<p>° YES - per Section 405-14 of the MPS <u>5/</u> - fire alarm systems</p>
<p>NO</p>	<p>° YES - exit obstructions - hazardous materials - hazardous occupancies - storage conditions</p>	<p>NO</p>	<p>NO</p>

NOTES:

2/ refers to the fire prevention code of the applicable governing body for each jurisdiction

3/ "this code" refers to the BOCA Basic Property Maintenance Code; It is assumed that the "fire prevention code" refers to the fire prevention regulations adopted by the local jurisdiction.

4/ "this code" refers to the Code Enforcement Guidelines for Residential Rehabilitation

5/ refers to HUD 4900.1, Minimum Property Standards (MPS) for One and Two Family Dwellings and HUD 4910.1, MPS for Multifamily Housing.

6/ makes direct reference to the applicable provisions required by the building code for new construction

14. COMPARISON OF MEANS OF EGRESS/EXITS*

A. Extent of Coverage

All of the codes studied address this topic in one fashion or another. Three of the codes specifically cover it in a section or subsection entitled "Means of Egress"; three other codes treat it under the title "Exits" and one, the APHA-CDC Recommended Housing Maintenance and Occupancy Ordinance, includes it in a section on "Minimum Standards for Basic Equipment and Facilities." Only two of the codes, the New York State Model Housing Code and the Basic Property Maintenance Code, extend the coverage to such related areas as requirements for or maintenance of fire escapes and exit signs. These requirements being applicable only to multiple unit buildings. Both of the rehabilitation guideline documents and to an extent in the Uniform Housing Code reference is made to the appropriate code standards or local regulations for new construction. For the HUD guideline document direct reference is made to Section 405-6 on "Exits" of the HUD Minimum Property Standards. The Basic Property Maintenance Code is the only code to stipulate that doors in the required means of egress have to be openable from the inside without keys.

Overall, the code requirements for providing and maintaining exits and emergency means of escape from existing dwellings are in some cases expressed in such generalized terminology as to be vague and in other cases the provisions are specific and very clear (e.g., clearances, headroom). The requirements are not consistent among the codes, however, and several significant differences exist regarding number of required exits and clearances for emergency egress.

* The summary comparison charts relating to Means of Egress/ Exits immediately follow this discussion on pp. 55. Appendix F at the rear of this report contains the actual (or in some cases abstracted) code provisions along with the appropriate source citation.

B. Significant Findings

B.1 Among Housing Codes

The specified number of required exits for primary egress and emergency escape varies from code to code. The summary comparison table indicates that the APHA-CDC Recommended Housing Maintenance and Occupancy Ordinance simply requires two exits per dwelling unit regardless of whether it is a single or multiple family building. However, it further requires an exterior door or window for bedrooms below the fourth floor as a means of emergency egress. No minimum size or dimension are given for this opening other than "...of such dimensions as to be used as a means of emergency egress."

The New York State Model Housing Code distinguishes between one- and two-family dwelling units three stories or less in height and multiple dwellings. For the one- and two-family, three story buildings both a primary and emergency exit are required. Various options such as protected stairways, fire escapes, and sprinkler systems are offered for two-family dwellings more than three stories in height. The emergency exit may be a fire escape, another primary exit, or an exterior opening such as a window or door. Minimum characteristics for such an opening are an area of four square feet with a minimum dimension of 18 inches and the bottom of the opening no more than 42 inches above the floor. This code also has specific clearances for hallway ceiling heights and headroom of stairways in multiple unit dwellings.

The Uniform Housing Code states that dwelling units have direct access to the outside or to a public corridor and then makes a direct reference to Chapter 33 of the Uniform Building Code for additional requirements for exits. It then goes on to require at least one operable window or exterior door for emergency egress or rescue for each bedroom below the fourth story. The minimum area of this opening is given to be 5.7 square feet with a minimum

height dimension of 24 inches and a minimum width dimension of 20 inches. If the opening is a window, the maximum sill height specified is 44 inches above the floor. These minimum opening requirements vary from those of the New York State Model Housing Code as follows:

	UNIFORM HOUSING CODE	NEW YORK STATE MODEL HOUSING CODE
NET OPENABLE AREA	5.7 sq. ft.	4.0 sq. ft.
MINIMUM DIMENSIONS	24 in. in height 20 in. in width	18 inches
MAXIMUM SILL HEIGHT ABOVE FLOOR	44 inches	42 inches

The required minimum size of this opening may or may not be compatible with the Uniform Housing Code's other requirements for exterior opening for natural ventilation (see pp. 71 of this report).

In the case of the Standard Housing Code, no specific minimum exit requirements are given other than each dwelling unit shall have a safe, unobstructed means of egress. Provision for a second means of escape is not clearly stated. A minimum ceiling height for the means of egress and headroom clearance for stairs are specified. They differ from the values for such clearances required by the New York State Model Housing Code as follows:

	STANDARD HOUSING CODE	NEW YORK STATE MODEL HOUSING CODE
MINIMUM CEILING HEIGHT	7 ft.	7-1/2 ft.
MINIMUM HEADROOM	6 ft. 8 in.	7 ft.

The Basic Property Maintenance Code essentially requires a safe, continuous and unobstructed means of egress with no specific conditions on the number of exits, or second means of escape, building height, or minimum clearances of openings for emergency egress.

All of the housing codes, except the Standard Housing Code, have provisions on the spatial arrangement and path of travel of the means of egress. As indicated, the only code to prohibit the need for keys to unlock exterior doors from inside is the Basic Property Maintenance Code.

The New York State Model Housing Code has specific provisions on the construction, installation and maintenance of fire escapes as a secondary means of egress and covers specific lighting requirements for exits in multiple unit buildings. These two subjects are not covered by the other housing codes, except the Basic Property Maintenance Code which addresses the maintenance aspects.

B.2 Between Rehabilitation Guidelines

Both of the rehabilitation guideline documents have a general provision reciting the objectives for providing a safe means of egress and access by fire control personnel. For specific requirements, the Code Enforcement Guidelines for Residential Rehabilitation requires compliance with the local building code and the HUD Rehabilitation Standards cite the

HUD Minimum Property Standards as the basis for compliance. The HUD guidelines do provide, however, that alternate methods of protection can be provided when buildings cannot be rehabilitated in substantial conformance with the MPS criteria. No basis is given, however, for comparing or evaluating any alternate approaches. As indicated by the summary comparison table, neither of the rehabilitation guideline documents provide specific coverage for fire escapes nor lighting of exits.

B.3 Between Housing Codes and Rehabilitation Guidelines

The primary distinctions between the two classes of documents lies in the fact that the two rehabilitation documents are consistent in their reference to code standards for new construction while the housing codes, though not consistent among each other, do attempt to cover existing situations in residential buildings even though many older existing dwellings may not realistically be able to comply with all of the housing code requirements.

TABLE 7

MEANS OF EGRESS/EXITS - SUMMARY COMPARISON OF PROVISIONS

MEANS OF EGRESS/EXITS - Summary Comparison of Provisions

SUBJECT MATTER	APHA-CDC RECOMMENDED HOUSING MAINTENANCE AND OCCUPANCY ORDINANCE, 1975 REV.	NEW YORK STATE MODEL HOUSING CODE, 1974	UNIFORM HOUSING CODE, 1979 EDITION (ICBO)
A. EGRESS/EXITS REQUIREMENTS 1. MEANS OF ESCAPE a. Number of required exits	° at least 2 per dwelling unit	° 2 exits per dwelling or per story <u>1/</u> ° protected interior stairways or fire escape <u>2/</u>	° direct access to the outside or to public corridor <u>3/</u>
b. Clearances for emergency egress or rescue	° exterior door or window of appropriate dimension <u>6/</u>	° 4 sq. ft. min. openable area - 18 in. min. dimension - 42 in. max. height above floor ° 7-1/2 ft. min. ceiling height for corridors ° 7 ft. min. headroom for stairways	° 5.7 sq. ft. min. openable area - 24 in. min. height - 20 in. min. width - 44 in. max. height above floor
c. Spatial arrangement of exits	° no passing through other dwelling units	° no passing through other dwelling units or through bathrooms	° no passing through kitchens, storerooms, closets, or bathrooms <u>7/</u>

NOTES:

- 1/ applies to two-family dwellings three stories or less in height
- 2/ applies to two-family dwellings more than three stories in height
- 3/ per Chapter 33 of the Uniform Building Code (ICBO)
- 6/ applies to bedrooms below fourth floor level of building
- 7/ per Section 3302 of the Uniform Building Code (ICBO)

MEANS OF EGRESS/EXITS - Summary Comparison of Provisions

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

<ul style="list-style-type: none"> ° safe unobstructed leading to safe space at ground level 	<ul style="list-style-type: none"> ° safe, continuous and unobstructed every unit to have direct access to the outside or to public corridor 	<ul style="list-style-type: none"> ° safe means of egress from rehabilitated buildings <u>4/</u> 	<ul style="list-style-type: none"> ° permit people to leave safely in an emergency and permit access for fire control personnel <u>5/</u> ° allows alternate methods of protection
<ul style="list-style-type: none"> ° 7 ft. min. ceiling height ° 6 ft. 8 in. min. headroom for stairs 	<p align="center">-----</p>	<p align="center">-----</p>	<ul style="list-style-type: none"> ° 5.7 sq. ft. min. openable area <u>5/</u> - 24 in. min. height - 20 in. min. height - 44 in. max. height above floor
<p align="center">-----</p>	<ul style="list-style-type: none"> ° no passing through other units or through bathrooms ° doors to be easily opened from inside without keys 	<p align="center">-----</p>	<p align="center">---</p>

NOTES:
4/ per requirements of the building code applicable to one and two family dwelling occupancy or multi-family dwelling occupancy
5/ per Section 405-6 (EXITS) of the HUD Minimum Property Standards (requires 2 means of egress to ground level)

MEANS OF EGRESS/EXITS - Summary Comparison of Provisions (Cont.)

SUBJECT MATTER

APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.

NEW YORK STATE MODEL
HOUSING CODE,
1974

UNIFORM HOUSING CODE, ^{IDE.}
_{BO)}
1979 EDITION (ICBO)

2. FIRE ESCAPES

a. Provide (where necessary) and maintain fire escapes

° YES - specific criteria given
see Appendix F

° -----

3. EXIT SIGNS

a. Provide (where necessary) and maintain exit signs

° YES - specific criteria given 8/

° -----

NOTES:

8/ applies to multiple dwelling premises

MEANS OF EGRESS/EXITS - Summary Comparison of Provisions (Cont.)

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

STANDARD HOUSING CODE, 1979 EDITION (SBCCI)	BASIC PROPERTY MAINTENANCE CODE, 1978 EDITION (BOCA)	CODE ENFORCEMENT GUIDELINES FOR RESIDENTIAL REHABILITATION (BOCA)	HUD 4940.4, MINIMUM STANDARDS FOR REHABILITATION FOR RESIDENTIAL PROPERTIES, FEB. 1978
-----	° YES - maintenance	-----	-----
-----	° YES - maintenance	-----	-----



15. COMPARISON OF LIGHT AND ILLUMINATION REQUIREMENTS*

A. Extent of Coverage

Daylighting of habitable rooms by means of windows or other glazed exterior openings is a requirement which states minimum levels of acceptability for all seven code documents reviewed. The need for natural lighting in residences is generally based on social-psychological concerns and environmental health factors (e.g., germicidal protection) of occupants. Other more recent concerns involve energy conservation considerations. There also exists the safety benefits of sunlight as a free back-stop for failures in artificial sources of light. The rationale on which lighting criteria are established by code making bodies, however, appear to be arbitrarily set without benefit of any identifiable technical base.

The code requirements for natural lighting and natural ventilation in existing buildings were generally consolidated as a single code classification in most of the codes examined. This commonality exists because of their dependence on the same exterior window or opening. The Basic Property Maintenance Code made deliberate attempts to address them as separate code subsections but referred to the same exterior window as the common source for both natural light and natural ventilation provisions for habitable rooms.

All of the codes reviewed require artificial lighting facilities in all habitable rooms and bathrooms and in a variety of

* The summary comparison charts relating to Light and Illumination Requirements immediately follow this discussion on pp. 63. Appendix G at the rear of this report contains the actual (or in some cases abstracted) code provisions along with the appropriate source citation.

other public and private building spaces (hallways, laundry rooms, etc.). The actual utilization of light fixtures and receptacles is dependent, however, on the availability of electrical service to the building. As reviewed in the discussion on electrical requirements (see pp. 87) the existence of electrical service is not absolutely required in all cases. Except for a very few instances, however, no specific illumination levels are specified. The illumination provisions given by the two rehabilitation guideline documents are stated in performance terminology.

The summary comparison tables on electrical requirements (see pp. 87) contains additional information on artificial light requirements and the summary comparison tables on ventilation requirements (see pp. 71) also relates to the natural lighting aspects of windows and other exterior openings.

B. Significant Findings

B.1 Among Housing Codes

The required minimum window area for admission of natural light to habitable rooms is 10% of the floor area for three codes and 8% for the other two housing codes. The Uniform Housing Code further specifies an absolute minimum glazed area of 10 square feet and the Standard Housing Code requires the minimum daylighting area to be 15% of the floor area if the required opening is a skylight. The codes have somewhat varying provisions regarding clear space in front of the required window or opening and distance to adjoining structures or other adjacent obstructions. There is general agreement on a three feet distance for such clearances among three of the codes. The New York State Model Housing Code has specific criteria for determining clearances for tall buildings with inner courts and walls of adjacent buildings. The Uniform Housing Code provides additional criteria in the form of an exception if the required window opens into a

roofed porch provided the porch has adequate height, open area and exposure. This code also addresses windows in service rooms which open into open and unobstructed vent shafts of no more than two stories. A "service room" is not defined as to its residential use, however, in the code document.

There was no apparent agreement among the codes on the issue of providing natural light in non-habitable rooms. Where it was covered by the codes non-habitable rooms were either to be treated the same as the habitable room without the requirement for a window or provided with artificial illumination.

An unspecified level of artificial illumination of habitable rooms and a variety of other spaces was required by all of the housing codes. As indicated this requirement depends on the availability of electric service to the building for several of the codes. The comparison and evaluation of artificial lighting requirements in the codes are covered in more detail in the summary comparison table of electrical requirements elsewhere in this report (see pp. 87).

B.2 Between Rehabilitation Guideline

As with the housing codes there exists some variation (8% vs. 10%) between the two guideline documents in the fractional floor area required for natural lighting. The HUD Rehabilitation Standard, as it does for natural ventilation requirements, allows for treating adjoining interior rooms jointly with an exterior room based on the size of the common wall opening in relation to the floor area of the interior room. The HUD document does not concern itself with open space or clearances from nearby obstructions for exterior windows, but the Code Enforcement Guidelines for Residential Rehabilitation does. Neither document require natural lighting of non-habitable rooms. Kitchens are required to have artificial lighting according to the HUD document whereas the Code Enforcement Guidelines for Residential Rehabilitation under one

provision leaves kitchen lighting optional. In another provision a kitchen, if defined as "occupiable" space, would definitely require artificial lighting. Habitable rooms are required to have artificial lighting by both documents as are an inconsistent mix of other classifications of private (bathrooms, kitchens, etc.) and common building spaces.

B.3 Between Housing Codes and Rehabilitation Guidelines

As a group all of the documents seem to be attempting to provide some level of social well-being to occupants based upon traditional rule-of-thumb values without much benefit of scientific reasoning. Overall, the code standards in all the documents are somewhat arbitrary in their coverage and inconsistent in the treatment of various room classifications or uses of habitable and non-habitable space. There also is inconsistency in distinguishing the existence of requirements for natural and/or artificial light in various rooms (e.g., kitchens) when in fact, electrical service may not even be available to the building. Confusion and conflict are introduced with the oversimplistic consolidation of natural lighting and natural ventilation provisions in the codes. The effects of window orientation and exposure on daylighting levels and energy conservation strategies are not considered.

Also, window treatments of shades, drapes, curtains and blinds have the effect of negating the net clear area required by the provisions. Overall, the most noteworthy treatment of lighting provisions is that contained in the New York State Model Housing Code, even though it also portrays some of the above shortcomings.

TABLE 8

LIGHT AND ILLUMINATION - SUMMARY COMPARISON OF PROVISIONS

LIGHT AND ILLUMINATION - Summary Comparison of Provisions

SUBJECT MATTER

**APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.**

**NEW YORK STATE MODEL
HOUSING CODE,
1974**

**UNIFORM HOUSING CODE,
1979 EDITION (ICBO)**

A. <u>NATURAL LIGHT</u> * 1. <u>HABITABLE ROOMS</u> a. Source of natural light	<ul style="list-style-type: none"> ° at least one window or skylight 	<ul style="list-style-type: none"> ° one or more windows, skylights, transparent or translucent panels ° excludes kitchens 	<ul style="list-style-type: none"> ° exterior glazed openings
b. Min. daylighting area for admission of natural light	<ul style="list-style-type: none"> ° 10% of floor area 	<ul style="list-style-type: none"> ° 10% of floor area of habitable space <u>1/</u> ° only window areas 6" above adjoining grade are applicable 	<ul style="list-style-type: none"> ° 10% of floor area ° 10 sq. ft. min. glazed area
c. Open space/clearances from obstructions to origin of natural light and ventilation	<ul style="list-style-type: none"> ° face directly to outdoors ° no structure within 3 ft. of window <u>2/</u> 	<ul style="list-style-type: none"> ° directly face open space of sufficient area ° specific criteria for open space given - see Appendix <u>G</u> 	<ul style="list-style-type: none"> ° open directly onto street or alley (or yard or court on same lot line) ° allows for windows that open to roofed porches and vent shafts - see Appendix <u>G</u>
2. <u>NON-HABITABLE ROOMS</u> a. Natural lighting requirement (including any provision for alternate means of illumination)	<ul style="list-style-type: none"> ° same as habitable room except no window or skylight required 	<ul style="list-style-type: none"> ° (primary requirement is for electric light of sufficient intensity) 	-----

NOTES:

1/ Indicated area of openings to provide required amount of light equivalent to that transmitted through clear glass

2/ windows shall not be deemed to face directly outdoors and thus not contributing to the required minimum total window area if structures are located less than 3 feet from the window and extend to a level above that of the ceiling of the room.

* See also summary chart - on "Ventilation Requirements"

LIGHT AND ILLUMINATION - Summary Comparison of Provisions (Cont.)

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

<ul style="list-style-type: none"> ° at least one window or skylight 	<ul style="list-style-type: none"> ° at least one window ° kitchens may have artificial lighting 	<ul style="list-style-type: none"> ° glazed openings ° kitchens may have artificial lighting 	<ul style="list-style-type: none"> ° windows, glazed doors, or skylights ° kitchens shall have artificial lighting
<ul style="list-style-type: none"> ° 8% of floor area ° 15% of area if only window is a skylight 	<ul style="list-style-type: none"> ° 8% of floor area 	<ul style="list-style-type: none"> ° 8% of floor area 	<ul style="list-style-type: none"> ° 10% of floor area (applies to new or remodeled rooms)
<ul style="list-style-type: none"> ° face directly to outdoors ° no structures within 3 ft. of window <u>2/</u> 	<ul style="list-style-type: none"> ° face directly to outdoors ° no structures within 3 ft. of window <u>2/</u> 	<ul style="list-style-type: none"> ° open directly onto street, or alley, or yard or court located on same lot as building 	-----
<ul style="list-style-type: none"> ° same as habitable room except no window or skylight required 	<ul style="list-style-type: none"> ° provide either natural or artificial light of sufficient intensity and distribution 	-----	<ul style="list-style-type: none"> ° (primary requirement is for artificial light)

NOTES:

2/ windows shall not be deemed to face directly outdoors and thus not contributing to the required minimum total window area if structures are located less than 3 feet from the window and extend to a level above that of the ceiling of the room

LIGHT AND ILLUMINATION - Summary Comparison of Provisions (Cont.)

SUBJECT MATTER	APHA-CDC RECOMMENDED HOUSING MAINTENANCE AND OCCUPANCY ORDINANCE, 1975 REV.	NEW YORK STATE MODEL HOUSING CODE, 1974	UNIFORM HOUSING CODE, 1979 EDITION (ICBO)
B. <u>ARTIFICIAL LIGHT</u> ** 1. <u>HABITABLE ROOMS</u> a. Provision for artificial illumination **	° 2 convenience outlets (1 may be ceiling or wall light fixture) <u>3/</u>	° 1 convenience outlet for each multiple of 20 ft. of distance around room	° 2 convenience outlets (1 may be ceiling or wall light fixture) <u>3/</u>
2. <u>OTHER SPACES</u> ** a. Provides for artificial lighting of other interior spaces of buildings	° YES <u>3/</u> - bathrooms - laundry room - furnace room - public halls <u>4/</u> - stairways <u>4/</u>	° YES - kitchenettes - bathrooms - stairways - laundry rooms - furnace room - garages <u>5/</u> - hallways - exits - all public spaces	° YES <u>3/</u> - public hallways - stairways - exitways - bathrooms - laundry room - furnace room
3. <u>EXTERIOR AREAS</u> a. Provides for artificial lighting of exterior areas of buildings	NO	° YES <u>8/</u> - entranceways - walks - driveways - facilities used by pedestrians	NO

NOTES:

3/ where there is usable electric service available

4/ requires at least 10 foot candles of natural or artificial light at the tread or floor level at all times

5/ applies to garages within or accessory to multiple dwellings (e.g., apartment houses)

8/ applies to multiple dwelling premises

** see also summary chart - on "Electrical Requirements"

LIGHT AND ILLUMINATION - Summary Comparison of Provisions (Cont.)

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

<p>° 2 convenience outlets (also 1 wall switch controlled fixture in bedrooms) <u>3/</u></p>	<p>° 2 convenience outlets (1 may be ceiling or wall light fixture) <u>3/</u></p>	<p>° provide artificial light via electrical fixtures and outlets distributed so as to provide satisfactory illumination</p>	<p>° provide and distribute so as to assure healthful conditions and satisfactory illumination</p>
<p>° YES <u>3/</u> - kitchens - bathrooms - laundry room - furnace room - common halls <u>6/</u> - stairways <u>6/</u></p>	<p>° YES <u>3/</u> - kitchens - bathrooms - laundry room - furnace room - common halls <u>7/</u> - stairways <u>7/</u></p>	<p>° YES - occupiable rooms - utility spaces - common spaces</p>	<p>° YES - kitchens - bathrooms - toilet compartments - all public spaces</p>
<p align="center">NO</p>	<p align="center">NO</p>	<p align="center">NO</p>	<p align="center">NO</p>

NOTES:

3/ where there is usable electric service available

6/ not applicable to one-family dwellings. Requires at least one foot candle intensity of illumination at the floor at all times in the darkest portion of normally traveled stairs and passageways.

7/ not applicable to one-family dwellings. Requires at least a sixty watt light bulb for illumination at all times throughout normally traveled stairs and passageways.

16. COMPARISON OF VENTILATION REQUIREMENTS

A. Extent of Coverage

Adequate ventilation is essential in meeting many of the fundamental human needs in housing. These needs include the maintenance of a thermal environment that will permit adequate heat loss from the human body and providing an atmosphere of reasonable chemical purity. Factors controlling heat loss in the body are air temperature, mean radiant temperature of surrounding surfaces, relative humidity, and air movement. Thus, there is significant interaction between thermal comfort and ventilation factors that affect the residential atmosphere.

In response to these and other needs for sustaining indoor air quality, all of the code documents evaluated require natural ventilation of all habitable rooms. Some of the documents reviewed allow mechanical ventilation as an acceptable substitute for natural ventilation in habitable rooms, but the allowance is not consistent among all of the codes and it varies depending on use of the habitable space. Also, they all require ventilation of bathrooms, but permit the use of mechanical ventilation devices in lieu of natural ventilation except in one case (Code Enforcement Guidelines for Residential Rehabilitation) which allows natural ventilation in lieu of mechanical ventilation. Kitchen space, where mentioned, is treated separately depending on whether it is recognized as a habitable or non-habitable but occupiable room. One code, the New York State Model Housing Code, provides extensive and detailed criteria for a variety of

* The summary comparison charts relating to Ventilation Requirements immediately follow this discussion on pp. 71. Appendix H at the rear of this report contains the actual (or in some cases abstracted) code provisions along with the appropriate source citation.

different public and private spaces and distinguishes between one- and two-family dwellings and multiple dwellings in its coverage of ventilation requirements.

It also provides what is perceived to be extraordinary coverage of installation and maintenance requirements for mechanical ventilation systems compared to any of the other codes examined. This code takes the form of almost providing design criteria in this and other areas of coverage.

Practically all of the codes directly integrate their ventilation requirements with those provisions for light, since, in many cases, the natural ventilation requirements are a function of the window area requirements for natural lighting. For purposes of this evaluation, however, it was more meaningful to separate them into separate code areas to facilitate comparison and analysis. The natural lighting requirements are presented in the summary comparison table entitled "Light and Illumination Requirements" (see pp. 63). Some provisions relevant to mechanical ventilation are also presented on the summary comparison table for "Mechanical Requirements" (see pp. 79).

B. Significant Findings

B.1 Among Housing Codes

Minimum natural ventilation criteria are based on 45% of the minimum glazed area of openable windows or other exterior openings (e.g., skylights, etc.) for three of the housing codes. "Minimum glazed area" is the requirement for natural light for habitable rooms and is normally 8% or 10% of the floor area. The other two codes use 5% of the floor area of the room as the minimum requirement for openable area to allow for circulation of outside air. The Uniform Housing Code further stipulates an absolute minimum openable area of 5 square feet for natural ventilation. This may or may not conflict with the Uniform Building Codes' other

minimum opening area of 5.7 square feet required for emergency egress from sleeping rooms (see pp. 55). It appears that these two arbitrary rules of thumb approaches (i.e., 45% glazed area and 5% of floor area) to specifying ventilation provisions are for all practical purposes equivalent but more significantly are lacking any rational technical basis for insuring the attainment of an important health goal. Also, none of the provisions give consideration to the effects of other parameters (e.g., energy conservation measures) of existing buildings on the health of inhabitants.

For non-habitable rooms, there is general agreement on allowing mechanical ventilation where no exterior window or opening is available. The Uniform Housing Code is the only housing code that specifically allows for treating adjoining interior rooms jointly with an exterior room for determining light and ventilation requirements based on the size of the common wall opening in relation to the floor area of the interior room. The New York State Model Housing Code allows for mechanical ventilation of habitable rooms but not as a substitute for natural ventilation; while the Standard Housing Code allows substitution but not in habitable rooms used for sleeping rooms.

The provisions of three of the codes are inconsistent or incomplete in defining mechanical ventilation air quantities in terms of air changes per hour and amount of recirculation allowed. Most defer to an "approved" system of mechanical ventilation.

The Basic Property Maintenance Code has specific restrictions regarding ventilation requirements which disallow cooking in sleeping rooms and another which restricts processes that have toxic fumes or contaminating agents. This latter provision seemed unusual to be included in a housing code since it refers to workrooms.

B.2 Between Rehabilitation Guidelines

For purposes of comparison the two rehabilitation guidelines appear to treat natural ventilation requirements similarly. They differ, however, in their treatment of allowing mechanical ventilation as a substitute for natural ventilation in habitable rooms. The HUD Rehabilitation Standard limits such substitutions to kitchen space only. The HUD Rehabilitation Standard also provides an allowance for treating adjoining interior rooms similar to that described previously for the Uniform Housing Code. The Code Enforcement Guidelines for Residential Rehabilitation provides mechanical ventilation requirements for both habitable and non-habitable rooms in definitive air quantities while the HUD document does not. Both documents address the need for adequate ventilation of utility spaces and other structural spaces (i.e., attics, crawl spaces, etc.) to minimize dampness and decay conditions. The HUD Document also includes public hallways and stairways in its provisions.

B.3 Between Housing Codes and Rehabilitation Guidelines

In terms of intent for the provision of an adequate air supply, the two classes of documents are generally comparable and consistent in their overall approach. But, the provisions appear arbitrary in depth and scope. Some are more specific than others in their degree of coverage and some extend the coverage of ventilation requirements to building spaces not considered by others. The substitution of mechanical ventilation for required natural ventilation in all habitable rooms seemed inconclusive.

The basis on which the criteria of the provisions are established does not appear to have demonstrated technical basis nor is there adequate coverage for the process of removal of undesired properties from the air space (e.g., undesired pollutants in both gaseous and particulate state, undesired odors, etc.). The interaction of energy conservation measures on indoor air quality of existing buildings are not addressed by either the housing codes or the rehabilitation guidelines.

TABLE 9

VENTILATION REQUIREMENTS - SUMMARY COMPARISON OF PROVISIONS

VENTILATION REQUIREMENTS - Summary Comparison of Provisions

SUBJECT MATTER	APHA-CDC RECOMMENDED HOUSING MAINTENANCE AND OCCUPANCY ORDINANCE, 1975 REV.	NEW YORK STATE MODEL HOUSING CODE, 1974	UNIFORM HOUSING CODE, 1979 EDITION (ICBO)
----------------	--	---	--

<p>A. NATURAL VENTILATION</p> <p>1. HABITABLE ROOMS</p> <p>a. Ventilation source per habitable room</p>	<ul style="list-style-type: none"> ° at least 1 window or skylight ° easily openable 	<ul style="list-style-type: none"> ° openable windows or other openings ° area must open at least 6" above adjoining finished grade ° excludes kitchens directly 	<ul style="list-style-type: none"> ° openable exterior openings
<p>b. Min. clear openable area for exterior openings <u>1/</u></p>	<ul style="list-style-type: none"> ° 45% of min. glazed area <u>2/</u> 	<ul style="list-style-type: none"> ° 5% of floor area 	<ul style="list-style-type: none"> ° 5% of floor area ° 5 sq. ft. min. opening required
<p>c. Open space/clearances from obstructions to origin of natural light and ventilation</p>	<ul style="list-style-type: none"> ° face directly to outdoors 	<ul style="list-style-type: none"> ° face open space of sufficient area ° specific limitations given, - see Appendix <u>II</u> 	<ul style="list-style-type: none"> ° open directly onto street or alley (or yard or court on same lot line) ° allows for windows that open to roofed porches and vent shafts - see Appendix <u>II</u>
<p>2. NON-HABITABLE ROOMS</p> <p>a. Natural ventilation requirement (including any provision for alternate means of ventilation)</p>	<ul style="list-style-type: none"> ° same as habitable room ° no window or skylight required if mechanical ventilation is provided 	<ul style="list-style-type: none"> ° openings of 3 sq. ft. for kitchenettes; 1-1/2 sq. ft. for bathrooms ° mechanical ventilation as alternate 	<ul style="list-style-type: none"> ° 5% of floor area for opening ° 1-1/2 sq. ft. min. opening required ° mechanical ventilation as alternate ° provides basis for treating interior rooms in combination with habitable rooms

NOTES:

1/ openable areas include those openable parts of skylights, windows, or other openings in exterior walls that face directly on open space.

2/ "min. glazed area" is that provided for natural light requirements of habitable rooms (refer to chart)

* See also summary chart - on "Light and Illumination" and - on "Mechanical Requirements"

VENTILATION REQUIREMENTS - Summary Comparison of Provisions (Cont.)

STANDARD HOUSING CODE, 1979 EDITION (SBCCI)	BASIC PROPERTY MAINTENANCE CODE, 1978 EDITION (BOCA)	CODE ENFORCEMENT GUIDELINES FOR RESIDENTIAL REHABILITATION (BOCA)	HUD 4940.4, MINIMUM STANDARDS FOR REHABILITATION FOR RESIDENTIAL PROPERTIES, FEB. 1978
<ul style="list-style-type: none"> ° at least 1 window or skylight ° easily openable 	<ul style="list-style-type: none"> ° at least 1 window ° easily openable 	<ul style="list-style-type: none"> ° windows, doors, or other means 	<ul style="list-style-type: none"> ° acceptable means for healthful environment
<ul style="list-style-type: none"> ° 45% of min. glazed area <u>2/</u> 	<ul style="list-style-type: none"> ° 45% of min. glazed area <u>2/</u> 	<ul style="list-style-type: none"> ° 5% of floor area 	<ul style="list-style-type: none"> ° 5% of floor area ° 3 sq. ft. min. opening for kitchens
<ul style="list-style-type: none"> ° face directly to outdoors 	<ul style="list-style-type: none"> ° open space to be maintained unobstructed 	<p style="text-align: center;">-----</p>	<p style="text-align: center;">-----</p>
<ul style="list-style-type: none"> ° same as habitable room ° no window or skylight required if mechanical ventilation is provided 	<ul style="list-style-type: none"> ° same as habitable room ° no window required if mechanical ventilation is provided 	<ul style="list-style-type: none"> ° mechanical ventilation required ° natural ventilation allowed as alternate 	<ul style="list-style-type: none"> ° suggests treating certain interior rooms as habitable rooms on basis of combined floor area ° suggests gravity-type wind-driven roof ventilator for bathrooms

NOTES:

2/ "min. glazed area" is that provided for natural light requirements of habitable rooms (refer to chart)

VENTILATION REQUIREMENTS - Summary Comparison of Provisions (Cont.)

SUBJECT MATTER	APHA-CDC RECOMMENDED HOUSING MAINTENANCE AND OCCUPANCY ORDINANCE, 1975 REV.	NEW YORK STATE MODEL HOUSING CODE, 1974	UNIFORM HOUSING CODE, 1979 EDITION (ICBO)
B. MECHANICAL VENTILATION			
1. HABITABLE ROOMS			
a. Provision for mechanical ventilation or other alternate means	° allows other approved devices that afford adequate ventilation (e.g., integrated interior climate control facilities)	° may be provided but not as a substitute for natural ventilation ° kitchens may have either natural or mechanical ventilation	° may be provided in lieu of required exterior openings for natural ventilation
b. Min. mechanical ventilation requirements	° continuous operation per design capacity of installation <u>3/</u>	° at least 150 cfm exhaust from kitchens	° 2 air changes per hour per room with 20% fresh air
2. NON-HABITABLE ROOMS			
a. Min. mechanical ventilation requirement where such systems are provided. (See item A.2.a above)	° <u>3/</u>	° at least 150 cfm exhaust from kitchenettes ° 25 cfm exhaust from bathrooms	° 5 air changes per hour ° connected directly to outside
C. OTHER PROVISIONS			
1. Cover ventilation requirements for other building spaces, i.e. public areas, attics, etc. (Refer to Appendix H)	NO	° YES - public space - laundry rooms - corridors - garages - stairways	NO
2. Covers installation, and maintenance requirements or operational restrictions (Refer to Appendix H)	NO	° YES - installation - maintenance - operation	NO

NOTES:

3/ even though no specific ventilation air quantities are given, the provision does require that the ventilation system be "approved" or "approved by the appropriate authority".

VENTILATION REQUIREMENTS - Summary Comparison of Provisions (Cont.)

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

<p>° may substitute year round mechanical system in lieu of required windows except in sleeping rooms (window type air conditioning units are excluded)</p>	<p>° may be provided in lieu of natural ventilation</p>	<p>° may be provided in lieu of any or supplement natural ventilation</p>	<p>° may be substituted for natural ventilation in kitchens</p>
<p>° 3/</p>	<p>_____</p>	<p>° 2 air changes per hour per room with 20% fresh air ° 3 air changes per hour with no recirculation for kitchens</p>	<p>° _____</p>
<p>° 3/</p>	<p>° 3/</p>	<p>° 5 air changes per hour with no recirculation for bathrooms ° 2 air changes per hour with 20% fresh air for utility rooms</p>	<p>° _____</p>
<p align="center">NO</p>	<p align="center">NO</p>	<p>° YES - attics - crawl spaces</p>	<p>° YES - public entries - utility space - attics - hallways - stairways</p>
<p align="center">NO</p>	<p>° YES - operation</p>	<p align="center">NO</p>	<p>° YES - installation - maintenance - operation</p>

NOTES:

3/ even though no specific ventilation air quantities are given, the provision does require that the ventilation system be "approved" or "approved by the appropriate authority".

17. COMPARISON OF MECHANICAL REQUIREMENTS*

A. Extent of Coverage

Regulatory concerns of the mechanical aspects in existing residential occupancies should nominally address those health and safety requirements dealing with the installation and maintenance of heating, ventilating, cooling, refrigeration and other energy-related systems and appliances. These mechanical systems and the accompanying code requirements are intended to sustain occupant health along with other attributes such as comfort and convenience. Code requirements should also responsibly address the attendant safety to occupants and the property itself resulting from the potential hazards that such systems introduce. Regulatory coverage of the health and comfort considerations was consistent among the seven documents reviewed as were requirements for the safe operation, maintenance and installation clearances from combustibles. Inconsistent coverage however, appears in the areas of provisions for such safeguards as safety controls, fail-safe devices, combustion air supply and removal of products of combustion. The New York State Model Housing Code and the Basic Property Maintenance Code were the two documents that provided the most extensive coverage of all health and safety areas in the comparison. None of the documents reviewed, except briefly in the HUD Rehabilitation Standards and the New York State Model Housing Code, give any consideration to economy of operation, thermal efficiency or other economic or energy conservation issues.

It should be pointed out that because of the format and organization of the summary comparison tables in this report and the treatment of the provisions dealing with ventilation

* The summary comparison charts relating to Mechanical Requirements immediately follow this discussion on pp. 79. Appendix I at the rear of this report contains the actual (or in some cases abstracted) code provisions along with the appropriate source citation.

requirements in the codes themselves, the material on mechanical ventilation is presented with the summary comparison tables on "Ventilation Requirements" (see pp. 71). Also, the comparison data relevant to domestic hot water heating facilities are presented in the summary comparison chart on "Plumbing Requirements" (see pp. 95).

As indicated, the codes in their various treatments of the mechanical requirements for housing do not package them the same or relate to them in any consistent manner in the content of their respective publications. Mechanical provisions can be found under an array of major headings or subheadings, e.g., "Minimum Thermal Standards," "Heating Facilities," "Cooking and Heating Equipment," etc.

B. Significant Findings

B.1 Among Housing Codes

The minimum thermal standards required by the five housing codes are related to winter heating. Air conditioning is covered extensively only by the New York State Model Housing Code which has requirements for installation, maintenance, and operation along with safety controls but no requirement for summer thermal conditions. The minimum indoor temperature that the heating system must maintain ranges from 65°F to 70°F among the five housing codes as follows:

Basic Property Maintenance Code	65°F
APHA-CDC Recommended Housing Ordinance	68°F
New York State Model Housing Code	70°F
Uniform Housing Code	70°F
Standard Housing Code	70°F

The exact room location for measurement of the ambient indoor temperature varies somewhat among the five codes and the New York State Model Housing Code is the only code to allow a night setback temperature to 55°F from 11:00 p.m. to 6:00 a.m.

For installation and maintenance, the housing codes in three cases (i.e., Uniform Housing Code, Standard Housing Code, and Basic Property Maintenance Code) refer to the applicable local or model mechanical code or building code. Maintenance of proper clearances from combustibles is specifically covered by only two codes (New York State Model Housing Code and Basic Property Maintenance Code). As indicated previously these are the two codes that also have requirements for safety controls, combustion air supply and removal of products of combustion. All five of the housing codes have specific requirements that prohibit the use of certain types of heating equipment (primarily unvented fuel-burning devices) or fuels for heating or cooking.

B.2 Between Rehabilitation Guidelines

Both of the rehabilitation guideline documents are consistent in those code areas where they have no apparent requirements or restrictions except that the HUD Rehabilitation Standards do prohibit the use of unvented and open-flame radiant type space heaters. The Code Enforcement Guidelines for Residential Rehabilitation refers to the requirements in local codes for any new installations and the HUD document refers to National Fire Prevention Association (NFPA) standards for the installation requirements of certain heating devices.

The minimum thermal requirement for indoor temperature differs between the two documents - HUD specifies at least 70°F within living units and 75°F in housing for the elderly whereas the BOCA document leaves the thermal comfort level up to that prescribed by local codes. It should be noted that the HUD document requires corridors, public spaces, and utility areas to be maintained at the same minimum temperature as living units. This is an apparent departure from the other codes.

Both guidelines appropriately address the problem of evaluating nonconforming mechanical systems or equipment in existing buildings with regard to their continued use or replacement.

Even though addressed in general terms, no specific evaluation criteria or guidelines are given for making meaningful decisions.

B.3 Between Housing Codes and Rehabilitation Guidelines

For those mechanical code provisions which were compared, it is apparent that some of the housing codes provide more extensive regulation of safety matters and prohibited uses with regard to existing conditions in housing than the two rehabilitation guideline documents. Although based on a subjective evaluation, it is clear that the intent of the housing codes as a group is to require some minimum level of occupant health and comfort to be provided by safely installed and maintained mechanical equipment. In this regard, it is the inclination of the rehabilitation guideline documents to revert to the standards for new construction to achieve health and safety objectives.

TABLE 11

ELECTRICAL REQUIREMENTS - SUMMARY COMPARISON OF PROVISIONS

MECHANICAL REQUIREMENTS - Summary Comparison of Provisions

APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.

NEW YORK STATE MODEL
HOUSING CODE,
1974

UNIFORM HOUSING CODE,
1979 EDITION (ICBO)

SUBJECT MATTER

<p>A. HEATING AND COOKING FACILITIES 1. MINIMUM THERMAL REQUIREMENTS a. Indoor temperature to be maintained</p>	<ul style="list-style-type: none"> ° at least 68°F 	<ul style="list-style-type: none"> ° 70°F for residences ° 70°F from 6:00 a.m. to 11:00P.m. 1/ 2/ ° 55°F from 11:00 p.m. to 6:00 a.m. 1/ 3/ 	<ul style="list-style-type: none"> ° 70°F
<p>b. Measurement conditions</p>	<ul style="list-style-type: none"> ° 3 ft. above floor under ordinary winter conditions 	<ul style="list-style-type: none"> ° 5 ft. above floor, 3 ft. from exterior walls 	<ul style="list-style-type: none"> ° 3 ft. above floor
<p>c. Spaces in which temperatures are to be maintained</p>	<ul style="list-style-type: none"> ° habitable rooms ° bathrooms ° water closet compartments 	<ul style="list-style-type: none"> ° habitable spaces ° kitchenettes ° bathrooms ° toilet rooms 	<ul style="list-style-type: none"> ° dwelling units ° guest rooms
<p>2. INSTALLATION AND CLEARANCES a. Covers installation, clearance from combustibles, and maintenance of equipment</p>	<ul style="list-style-type: none"> ° YES - installation - operation 	<ul style="list-style-type: none"> ° YES - installation - clearances - operation - maintenance 	<ul style="list-style-type: none"> ° YES - installation 4/ - maintenance 4/
<p>3. PROHIBITED EQUIPMENT/FUELS a. Prohibits use of certain heating equipment or fuels</p>	<ul style="list-style-type: none"> ° YES - unvented fuel-burning heating devices 	<ul style="list-style-type: none"> ° YES - unvented space heaters - portable heaters using kerosene - heaters located in exits, bedrooms or bathrooms - use of gasoline as a fuel 	<ul style="list-style-type: none"> ° YES - unvented fuel-burning heating devices

NOTES:

- 1/ applies to one- and two-family dwellings not wholly owner occupied. Specific annual heating periods by county are given for New York State based on annual heating degree days.
- 2/ when outside temperature falls below 55°F
- 3/ when outside temperature falls below 40°F
- 4/ Installation and maintenance in accordance with Chapter 37 of the Uniform Building Code (ICBO) and the Uniform Mechanical Code (ICBO)

MECHANICAL REQUIREMENTS - Summary Comparison of Provisions (Cont.)

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

<ul style="list-style-type: none"> ° at least 70°F 	<ul style="list-style-type: none"> ° 65°F 	<ul style="list-style-type: none"> ° assure interior comfort ° min. temperature as required by local code 	<ul style="list-style-type: none"> ° at least 70°F ° not less than 75°F in housing for the elderly
<ul style="list-style-type: none"> ° 3 ft. above floor under ordinary winter conditions 	<ul style="list-style-type: none"> ° 3 ft. above floor, 3 ft. from exterior wall 	<ul style="list-style-type: none"> ° ----- 	<ul style="list-style-type: none"> ° when outside temperature is at the design temperature
<ul style="list-style-type: none"> ° habitable rooms ° bathrooms 	<ul style="list-style-type: none"> ° habitable rooms ° bathrooms ° toilet rooms 	<ul style="list-style-type: none"> ° habitable units ° common spaces ° utility spaces 	<ul style="list-style-type: none"> ° living units ° corridors ° public spaces ° utility spaces
<ul style="list-style-type: none"> ° YES - installation <u>5/</u> - maintenance 	<ul style="list-style-type: none"> ° YES - installation <u>6/</u> - maintenance <u>6/</u> - clearances 	<ul style="list-style-type: none"> ° YES - installation <u>7/</u> - maintenance 	<ul style="list-style-type: none"> ° YES - installation - maintenance - clearances <u>8/</u>
<ul style="list-style-type: none"> ° YES - unvented fuel-burning heating devices - portable cooking equipment using flame 	<ul style="list-style-type: none"> ° YES - portable cooking equipment using flame 	<ul style="list-style-type: none"> ° ----- 	<ul style="list-style-type: none"> ° YES - unvented space heaters <u>9/</u> - open-flame radiant type space heaters <u>9/</u>

NOTES:

5/ installation in accordance with the building, mechanical, gas or electrical code

6/ installation and maintenance in accordance with the building code (or other applicable laws or ordinances)

7/ new installations to comply with requirements of the mechanical code or heating code (or other applicable local codes or ordinances)

8/ refers to NFPA Standard No. 54 and 54A National Fuel Gas Code for gas heaters and NFPA Standard No. 31-65, Standard for the Installation of Oil Burning Equipment, for oil fired heaters

9/ except for one- and two-family detached dwellings in localities where such devices are predominant method of providing heat

MECHANICAL REQUIREMENTS - Summary Comparison of Provisions (Cont.)

SUBJECT MATTER	APHA-CDC RECOMMENDED HOUSING MAINTENANCE AND OCCUPANCY ORDINANCE, 1975 REV.	NEW YORK STATE MODEL HOUSING CODE, 1974	UNIFORM HOUSING CODE, 1979 EDITION (ICBO)
4. SAFETY CONTROLS a. Requires installation and maintenance of safety controls on heating equipment	-----	° YES - installation - (various fail-safe devices) - maintenance	-----
5. COMBUSTION AIR SUPPLY a. Provide air supply for complete combustion and ventilation	-----	° YES - for complete combustion and ventilation - provide openings to exterior	° YES - ventilation for area and appliance <u>10/</u>
6. REMOVAL OF PRODUCTS OF COMBUSTION a. Requires connection to chimney, flue or vent	-----	° YES - solid or liquid fuel not to be connected to gas vents - requires placarding of gas vents	-----
7. EXISTING CONDITIONS a. Allows continued use of existing non-conforming systems or equipment	-----	-----	-----
B. MECHANICAL VENTILATION/CLIMATE CONTROL FACILITIES * 1. INSTALLATION, MAINTENANCE, OPERATION a. Covers installation and maintenance requirements or operational restrictions.	° YES - maintenance - operation	° YES - installation - maintenance - operation - safety controls	° YES - installation <u>10/</u> - maintenance - operation

NOTES:

10/ as required in the Uniform Mechanical Code (ICBO)

* See also summary chart - on "Ventilation Requirements".

MECHANICAL REQUIREMENTS - Summary Comparison of Provisions (Cont.)

STANDARD HOUSING CODE, 1979 EDITION (SBCCI)	BASIC PROPERTY MAINTENANCE CODE, 1978 EDITION (BOCA)	CODE ENFORCEMENT GUIDELINES FOR RESIDENTIAL REHABILITATION (BOCA)	SECTION 940.4, MINIMUM STANDARDS FOR REHABILITATION FOR RESIDENTIAL PROPERTIES, FEB. 1978
-----	° YES - maintenance	-----	-----
-----	° YES - for complete combustion and ventilation	-----	-----
-----	° YES - connect to an approved chimney, flue or vent	-----	-----
-----	-----	° YES - with approval of authorities having jurisdiction	° YES - evaluate for faulty operation, fire or other hazards. - replace or repair per code requirement.
° YES - operation	° YES - maintenance - operation	° YES - installation	° YES - installation <u>11/</u> - operation

NOTES:
11/ Installation of ventilating systems to be in compliance with NFPA 90A, Standard for the Installation of Air Conditioning and Ventilating Systems; for multifamily or NFPA 90B, Standard for the Installation of Warm Air Heating and Air Conditioning Systems for single family dwellings

18. COMPARISON OF ELECTRICAL REQUIREMENTS*

A. Extent of Coverage

In four of the seven code documents reviewed in this study the requirement that existing dwelling units even be provided with electrical service is subject to its availability to the premises. Two of those four codes would require a service entrance only if a connection were available within 300 feet of the building. The premise that adequate electrical service is an essential element of acceptable housing is inconclusive among the housing code documents since only one of these codes absolutely requires a service connection to an approved source. On the other hand, the rehabilitation guideline documents are definite in their requirement for such service and assume that such service exists or will be installed in conjunction with the building renovation process.

Other areas of coverage that are addressed in the regulations studied regarding electrical requirements include minimum standards for adequate service capacity and circuits, the existence of lighting fixtures and outlets throughout the dwelling, and provisions that the electrical system and its components be installed and maintained in a safe condition so as to prevent fire or electric shock. In most cases the codes refer to local regulations, codes or ordinances regarding installation and maintenance of electrical systems and equipment. The HUD Rehabilitation Standard specifically refers to the National Electrical Code for design layout and installation of new electrical work.

* The summary comparison charts relating to Electrical Requirements immediately follow this discussion on pp. 87. Appendix J at the rear of this report contains the actual (or in some cases abstracted) code provisions along with the appropriate source citation.

Only one of the codes, (i.e., New York State Model Housing Code) requires exterior lighting to illuminate entrances and other facilities (driveways, walks, etc.) of multiple dwelling premises. Other areas covered by the electrical provisions in some of the codes included emergency lighting of exits, public space, and stairways in multiple family dwellings. The HUD Rehabilitation Standard was singular in its coverage of requiring communication and alarm systems on a "where needed" basis in multifamily projects and also its coverage of special requirements in housing projects for the elderly and handicapped.

In the textual format of the code documents, electrical requirements are treated in a multitude of ways. For example, the APHA-CDC Recommended Housing Ordinance has a minimum of at least one 15 amp circuit per dwelling unit which is quite low in contrast to the New York State Model Housing Codes' requirement of one 15 amp branch circuit for each 400 square feet of total dwelling unit floor area and an additional 15 amp small appliance circuit in kitchens. Even this latter provision is somewhat low to be considered completely adequate when compared to new construction standards of the National Electrical Code, which nominally requires three watts per square foot for determining general lighting loads, at least two 20 amp small appliance circuits for kitchens and one 20 amp circuit for the laundry. (These are exclusive of any additional circuits for electric ranges or dryers.)

Local regulations, laws, and ordinances are referred to by four of the housing codes for the safe installation and maintenance of the electrical system and the use of "approved" equipment. The New York State Model Housing Code is the only code with specific provisions on safety hazards of electrical installations including wiring, overcurrent protection devices, accessibility, grounding, and use restrictions. Even though the correction of existing hazardous conditions may be implied in the other housing codes, only

the Basic Property Maintenance Code specifically addresses such issues as inadequate service, insufficient outlets, improper wiring or installation, etc., as the basis for the code official to require that the condition be corrected.

With certain variations, four of the housing codes require a minimum of two convenience outlets per habitable room. In most cases a ceiling or wall light fixture is allowed to fulfill the requirements for one of the convenience outlets, except for the Standard Housing Code which requires that bedrooms have a wall switched light fixture in addition to the two convenience outlets. The New York State Model Housing Code differs from the other housing codes by basing the number of convenience outlets on the perimeter of the room (one outlet required for every 20 feet or fraction of the room's perimeter distance). A lighting fixture may be substituted for one of the required outlets. The minimum outlet and lighting requirements given for kitchens, where specified, vary from being the same as for a habitable room to three outlets plus a wall switch controlled light fixture.

Non-habitable rooms such as bathrooms also have some variation between just one fixture and one fixture plus one outlet.

The codes also specify artificial lighting be provided for a variety of other spaces (public and private) and rooms (utility, laundry) but are not consistent in their treatment. The New York State Model Housing Code provides several provisions on the placement and illumination of emergency exit and directional signs for multiple dwelling buildings. The Basic Property Maintenance Code also covers illumination standards for stairways and common halls.

Clearances from overhead conductors on or near residential premises is only addressed in the New York State Model Housing Code.

B.2 Between Rehabilitation Guidelines

The HUD Rehabilitation Standard refers to the National Electrical Code for design and installation of new electrical work and sets an absolute minimum of two 15 amp general lighting circuits and one 20 amp appliance circuit for each living unit. It also specifies that individual branch circuits for any heavy duty equipment be provided as required by the National Electrical Code. The Code Enforcement Guidelines for Residential Rehabilitation, on the other hand, simply states that the electrical system be safe and supply adequate electrical energy for lighting, appliances and equipment and be installed in accordance with local laws. Both documents give some subjective guidance on the continued use or replacement of existing electrical wiring and equipment. Generally, replacement is required when existing electrical systems are not able to safely handle any additional capacity or they cause a potential source of hazard. The determination is left to local authority and in many cases will be made on an arbitrary or economic basis if no further technical guidance is available.

In contrast to that provided by the housing codes, neither of the rehabilitation guideline documents prescribe any minimum distribution of convenience outlets or lighting fixtures throughout various rooms. For the most part, the requirement is stated in terms of "satisfactory illumination," "supply electrical energy for proper illumination appliances, resident security," etc. The Code Enforcement Guidelines for Residential Rehabilitation performance statement, however, is limited to "satisfactory illumination."

As indicated previously, the HUD Minimum Rehabilitation Standards extends its requirements to areas not covered by the Code Enforcement Guidelines for Residential Rehabilitation. These areas are emergency lighting, communication and alarm systems and specific requirements in housing for the elderly and projects involving living units for the handicapped.

B.3 Between Housing Codes and Rehabilitation Guidelines

The requirements compared in this code area differ significantly between the two classes of code documents in that the housing codes concentrate on the existing situation and are prescriptive in their treatment of provisions, whereas the rehabilitation guidelines are concerned primarily with the installation of new electrical systems to meet modern standards.

TABLE 11

ELECTRICAL REQUIREMENTS - SUMMARY COMPARISON OF PROVISIONS

ELECTRICAL REQUIREMENTS - Summary Comparison of Provisions

SUBJECT MATTER

**APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.**

**NEW YORK STATE MODEL
HOUSING CODE,
1974**

**UNIFORM HOUSING CODE,
1979 EDITION (ICBO)**

<p>A. <u>ELECTRIC SERVICE</u> 1. <u>AVAILABILITY</u> a. Requires that electric service be supplied</p>	<p>° where available within 300 feet of building</p>	<p>° YES - connected to approved source of supply</p>	<p>° where available, within 300 feet of building</p>
<p>2. <u>SERVICE CAPACITY</u> a. Requires min. service supply capacity</p>	<p>° at least one 15 amp. circuit per dwelling unit ° no sharing with other units</p>	<p>° at least one 15 amp. lighting branch circuit per each 400 sq. ft. of floor area in dwelling unit ° at least one 15 amp. small appliance branch circuit in kitchens</p>	<p>° -----</p>
<p>3. <u>INSTALLATION</u> a. Contains requirements for installation, maintenance and operational restrictions</p>	<p>° YES - installation - maintenance - operation</p>	<p>° YES - installation - maintenance - operation</p>	<p>° YES - installation - maintenance</p>
<p>4. <u>EXISTING CONDITIONS</u> a. Requires correction/replacement of hazardous or inadequate existing systems, equipment or wiring</p>	<p>° -----</p>	<p>° -----</p>	<p>° -----</p>

ELECTRICAL REQUIREMENTS - Summary Comparison of Provisions (Cont.)

STANDARD HOUSING CODE, 1979 EDITION (SBCCI)	BASIC PROPERTY MAINTENANCE CODE, 1978 EDITION (BOCA)	CODE ENFORCEMENT GUIDELINES FOR RESIDENTIAL REHABILITATION (BOCA)	HUD 4940.4, MINIMUM STANDARDS FOR REHABILITATION FOR RESIDENTIAL PROPERTIES, FEB. 1978
° where available to the building	° where available to the building	° YES	° YES
-----	-----	° supply electrical energy for proper illumination, appliances and equipment	° at least two 15 amp. general lighting circuits and one 20 amp. appliance circuit per dwelling unit
° YES - installation - maintenance	° YES - installation - maintenance	° YES - installation	° YES - installation
-----	° YES - correct defects to eliminate hazzards	° YES - replace, alter, or repair - replace existing systems of inadequate capacity	° YES - replace potential hazzard sources - increase capacity of inad- equat facilities

ELECTRICAL REQUIREMENTS - Summary Comparison of Provisions (Cont.)

SUBJECT MATTER	APHA-CDC RECOMMENDED HOUSING MAINTENANCE AND OCCUPANCY ORDINANCE, 1975 REV.	NEW YORK STATE MODEL HOUSING CODE, 1974	UNIFORM HOUSING CODE, 1979 EDITION (ICBO)
B. ELECTRICAL FACILITIES *			
1. HABITABLE ROOMS			
a. Min. electrical convenience outlets or lighting fixtures per habitable room	° 2 separate outlets <u>1/</u> <u>2/</u> - or - ° 1 outlet and 1 wall or ceiling light fixture	° 1 outlet per 20 ft. (or fraction) of perimeter of room ° 1 light fixture may substitute for 1 outlet	° 2 separate outlets - or - ° 1 outlet and 1 light fixture
2. KITCHENS			
a. Min. electrical convenience outlets or lighting fixtures	° <u>4/</u>	° 2 outlets and 1 light fixture	° <u>5/</u>
3. NON-HABITABLE ROOMS			
a. Min. electrical convenience outlets or lighting fixtures	° 1 ceiling or wall-type light fixture	° 1 outlet and 1 light fixture <u>6/</u> <u>7/</u>	° 1 light fixture
4. OTHER SPACES *			
a. Provides for artificial lighting of other interior spaces of buildings	° YES - furnace rooms - public halls - stairways	° YES - furnace room - garages <u>10/</u> - hallways - exits <u>7/</u> - all public spaces	° YES - public hallways - stairways - exitways - furnace room
5. EXTERIOR AREAS			
a. Provides for artificial lighting of exterior areas of buildings	NO	° YES <u>10/</u> - entranceways - walks - driveways - facilities used by pedestrians	NO

NOTES:

- 1/ specifies wall type duplex outlets
- 2/ no duplex outlet shall serve more than two fixtures or appliances
- 4/ by definition, same requirement as for habitable room
- 5/ assumed to be same requirement as for habitable rooms
- 6/ furnace rooms, storage rooms, work shops, and similar service rooms shall have min. of one light fixture
- 7/ light switches required for controlling lights which illuminate points of entrance to buildings
- 10/ applies to multiple dwelling premises
- * See also summary chart - on "Light and Illumination Requirements"

ELECTRICAL REQUIREMENTS - Summary Comparison of Provisions (Cont.)

ANSI Z390.4, MINIMUM

STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)

BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)

CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)

STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978

<ul style="list-style-type: none"> ° 2 separate outlets ° 2 separate outlets plus 1 wall switch controlled light fixture in bedrooms 	<ul style="list-style-type: none"> ° 2 separate outlets - or - ° 1 outlet and 1 light fixture 	<ul style="list-style-type: none"> ° distribution shall be so as to provide satisfactory illumination <u>3/</u> 	<ul style="list-style-type: none"> ° provide electrical service for proper illumination, appliances, resident security and equipment <u>3/</u>
<ul style="list-style-type: none"> ° 3 outlets and light fixture controlled by wall switch 	<ul style="list-style-type: none"> ° 3 outlets - or - ° 2 outlets and 1 wall or ceiling light 	(same as habitable rooms)	(same as habitable rooms)
<ul style="list-style-type: none"> ° 1 outlet and 1 light fixture <u>8/</u> <u>9/</u> 	<ul style="list-style-type: none"> ° 1 outlet and 1 light fixture <u>8/</u> 	(same as habitable rooms)	(same as habitable rooms)
<ul style="list-style-type: none"> ° YES - furnace room - common halls <u>10/</u> - stairways <u>10/</u> 	<ul style="list-style-type: none"> ° YES - furnace room - common halls <u>10/</u> - stairways <u>10/</u> 	(same as habitable rooms)	(same as habitable rooms)
NO	NO	NO	NO

NOTES:

3/ applies to all rooms and spaces

8/ outlet required in bathrooms and laundry rooms

9/ in bathrooms the light fixture shall be controlled by a wall switch

10/ applies to multiple dwelling premises

19. COMPARISON OF PLUMBING REQUIREMENTS*

A. Extent of Coverage

For purposes of housing codes and rehabilitation of buildings for residential occupancy, plumbing may be defined as the practice, materials, and fixtures used in the installation, maintenance, and alteration of all piping, fixtures, appliances, and appurtenances in connection with sanitary or storm drainage facilities, the venting system, and the public or private water-supply systems. Generally, an inspection of existing housing involves a condition-assessment of three primary areas with regard to plumbing. An adequate potable water supply system; a safe, adequate drainage system, and proper fixtures and equipment including facilities for hot water supply and storage. In these three areas, all of the codes examined provide some degree of coverage. The depth and extent of coverage in any one area however varies from code to code. For example, proper venting of the drainage, waste, and vent (DWV) system is not mentioned in any of the housing codes and is only slightly covered in the rehabilitation guidelines. The provision for a storm drainage system is nominally a plumbing requirement. Two of housing codes - Uniform Housing Code and Standard Housing Code - do not provide coverage for storm water disposal from roofs of buildings.

In the organization of the provisions in the several codes, the treatment of plumbing requirements in certain instances is inconspicuously placed under a major heading entitled

* The summary comparison charts relating to Plumbing Requirements immediately follow this discussion on pp. 95. Appendix K at the rear of this report contains the actual (or in some cases abstracted) code provisions along with the appropriate source citation.

"Sanitary Facilities" or "Basic Equipment and Facilities." The HUD Rehabilitation Standards places plumbing requirements in a chapter entitled "Mechanical Equipment." Other codes, however, devote a separate chapter or major article to "Plumbing Facilities and Requirements."

Only one of the seven codes studied (i.e., the Basic Property Maintenance Code) gave any consideration to water conservation measures.

B. Significant Findings

B.1 Among Housing Codes

The five housing codes are in general agreement on the source and availability of the domestic water supply. They all specify an "approved" source of supply with the New York State Model Housing Code requiring connection to a public water supply system under certain conditions of proximity and type of dwelling. The same level of code agreement and intent generally exists for the sewage drainage system except that two codes - New York State Model Housing Code and Basic Property Maintenance Code - require main cleanouts and maintenance of DWV system.

All of the housing codes except one specify that "hot water" or "heated water" facilities be provided. The Basic Property Maintenance Code leaves the requirement for hot water on a "where provided" basis. The minimum temperature for hot water varied considerably among the five codes. The temperature varied from a low of 110°F (Uniform Housing Code) to a high 130°F to 140°F range from 6:00 a.m. to midnight (New York State Model Housing Code). The other three housing codes were in agreement with a minimum temperature of 120°F. The Standard Housing Code is the only code with a specific requirement for the storage capacity (i.e., 30 gallons) for the water heater; whereas, specific safety controls or maintenance procedures for the water heating system were covered in only three of the codes (New York State Model Housing Code, Standard Housing Code, and Basic Property Maintenance Code).

With certain variations regarding accessibility, privacy and clearances, the plumbing fixtures and facilities required by the codes were consistent. The subject of installation and maintenance of plumbing fixtures was also covered, though differently, in each of the housing codes. Two of the codes (New York State Model Housing Code and Basic Property Maintenance Code) had a requirement for accessibility to fixtures for cleaning and repairs. The Uniform Housing Code singularly requires plumbing fixtures to be of an approved glazed earthenware type or similar nonabsorbent material.

The use of privies are specifically prohibited by the New York State Model Housing Code as are wooden sinks by the Uniform Housing Code. Also, the New York State Model Housing Code has individual requirements on the construction and maintenance of water supply tanks. As previously mentioned a storm water disposal system is not required by two of the five housing codes.

The Basic Property Maintenance Code was alone in its coverage of water saving plumbing fixtures as replacements where required by local energy or plumbing codes.

B.2 Between Rehabilitation Guidelines

The two rehabilitation guidelines are consistent with each other in their treatment of plumbing requirements. The only exception is the fact that the HUD Rehabilitation Standard gives special treatment to plumbing fixtures and plumbing facilities in housing for the elderly and access for the handicapped. Specific reference is made to the requirements in the ANSI A117.1 Standard. The HUD document also has specific restrictions on the physical location of gas or oil fired water heaters within the dwelling and the proper venting of such appliances. Neither of the guideline documents give a specific minimum temperature level or range to be maintained for domestic hot water. The two guidelines also specify in general terms the conditions under which

existing plumbing facilities may continue in use for properties subject to rehabilitation. The lack of any objective criteria or more technically appropriate guidance will make such determinations difficult or impossible. New plumbing installations or additions to the plumbing system are to be installed in compliance with the requirements of the respective plumbing code or the HUD Minimum Property Standards for new construction. The Code Enforcement Guidelines for Residential Rehabilitation relates back to local regulations for storm drainage system requirements.

B.3 Between Housing Codes and Rehabilitation Guidelines

There does not appear to be significant differences between the housing codes as a group and the two rehabilitation guidelines regarding the overall intent in the treatment of plumbing requirements. The only perceivable difference is one of context - certain of the provisions in the rehabilitation guidelines being somewhat of a performance nature and slanted toward renovation and reconstruction while the housing codes as a group emphasize ongoing maintenance and upkeep with some intermixing of health and sanitation concerns.

TABLE 12

PLUMBING REQUIREMENTS - SUMMARY COMPARISON OF PROVISIONS

PLUMBING REQUIREMENTS - Summary Comparison of Provisions

**APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.**

**NEW YORK STATE MODEL
HOUSING CODE,
1974**

**UNIFORM HOUSING CODE,
1979 EDITION (ICBO)**

SUBJECT MATTER

<p>A. WATER SUPPLY AND DISTRIBUTION 1. AVAILABILITY a. Source and type of domestic water supply system required</p>	<ul style="list-style-type: none"> ◦ approved supply source and system ◦ provide adequate amount of heated and unheated water under pressure available at all times 	<ul style="list-style-type: none"> ◦ potable water from approved source ◦ sufficient volume and pressure ◦ available at all times ◦ no contamination ◦ connection to public water supply may be required <u>1/</u> 	<ul style="list-style-type: none"> ◦ approved supply source and system ◦ provide hot and cold running water ◦ quantities necessary for normal operation
<p>B. SEWAGE DRAINAGE SYSTEM 1. MEANS OF SEWAGE DISPOSAL a. Type of system</p>	<ul style="list-style-type: none"> ◦ approved sewer system 	<ul style="list-style-type: none"> ◦ public sewer or other approved system ◦ connection to a public sanitary sewer system may be required <u>1/</u> ◦ no discharges into New York State waters 	<ul style="list-style-type: none"> ◦ sanitary sewer or approved private system
<p>2. CLEANOUTS/MAINTENANCE a. Covers maintenance of sewage system</p>		<ul style="list-style-type: none"> ◦ provide and maintain adequate cleanouts 	
<p>C. WATER HEATING, STORAGE AND DISTRIBUTION 1. HOT WATER SUPPLY a. Minimum water temperature to be maintained</p>	<ul style="list-style-type: none"> ◦ 120°F at the outlet at all times <u>3/</u> 	<ul style="list-style-type: none"> ◦ 130°F to 140°F from 6:00 a.m. to midnight <u>2/</u> 	<ul style="list-style-type: none"> ◦ 110°F at the fixtures <u>3/</u>

NOTES:

1/ The source of water supply and means of sewage disposal for a one-and two-family dwelling shall be a public water supply system and public sanitary sewer system when such a system is within 100 ft. of the premises; for multiple dwelling the distance is 500 ft.

2/ applies to one-and two-family dwellings not wholly owner occupied and all multiple dwellings

3/ taken from "Definitions" section of code document

PLUMBING REQUIREMENTS - Summary Comparison of Provisions (Cont.)

STANDARD HOUSING CODE, 1979 EDITION (SBCCI)	BASIC PROPERTY MAINTENANCE CODE, 1978 EDITION (BOCA)	CODE ENFORCEMENT GUIDELINES FOR RESIDENTIAL REHABILITATION (BOCA)	140.4, MINIMUM STANDARDS FOR REHABILITATION FOR RESIDENTIAL PROPERTIES, FEB. 1978
<ul style="list-style-type: none"> ° potable water supply ° approved water distribution system ° adequate supply of hot and cold water 	<ul style="list-style-type: none"> ° public or an approved private water supply system ° no contamination ° sufficient volume and pressure of water 	<ul style="list-style-type: none"> ° approved public or private water supply system ° satisfactory hot and cold water 	<ul style="list-style-type: none"> ° satisfactory water supply
<ul style="list-style-type: none"> ° approved sewer system 	<ul style="list-style-type: none"> ° public or an approved private sewage system 	<ul style="list-style-type: none"> ° approved public or private sanitary sewer system ° satisfactory drainage and venting of system 	<ul style="list-style-type: none"> ° satisfactory drainage and venting of fixtures
	<ul style="list-style-type: none"> ° maintain and keep free of obstruction, leaks, health hazards 		
<ul style="list-style-type: none"> ° 120°F at the fixtures 	<ul style="list-style-type: none"> ° where provided ° 120°F at the fixtures 	<ul style="list-style-type: none"> ° provide hot water system 	<ul style="list-style-type: none"> ° provide domestic hot water system

PLUMBING REQUIREMENTS - Summary Comparison of Provisions (Cont.)

SUBJECT MATTER

**APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.**

**NEW YORK STATE MODEL
HOUSING CODE,
1974**

**UNIFORM HOUSING CODE,
1979 EDITION (ICBO)**

<p>2. <u>STORAGE AND DISTRIBUTION</u> a. Minimum storage capacity of water heater</p>	<p>° provide supply and distribution system</p>	<p>° provide supply and distribution system</p>	<p>° necessary for normal operation</p>
<p>3. <u>SAFETY CONTROLS/MAINTENANCE</u> a. Requires safety devices or operational controls</p>		<p>° safety devices to relieve hazardous pressures and excessive temperatures</p>	
<p>D. <u>PLUMBING FIXTURES</u> 1. <u>BASIC PLUMBING FIXTURES AND FACILITIES</u> a. Minimum requirements per dwelling unit</p>	<p>° sink in kitchen ° flush water closet, lavatory sink, and bathtub or shower in bathroom <u>4/</u></p>	<p>° kitchen sink, water closet, bathtub or shower, lavatory <u>4/</u> ° hot and cold water to every sink, lavatory, bathtub and shower</p>	<p>° sink in kitchen ° water closet, lavatory, and bathtub or shower in bathroom</p>
<p>2. <u>INSTALLATION/MAINTENANCE</u> a. Covers installation and maintenance requirements or operational restrictions</p>	<p>° YES - installation - maintenance</p>	<p>° YES - installation - maintenance - accessibility</p>	<p>° YES - installation - maintenance</p>

NOTES:

4/ lavatory may be located in close proximity to door leading to water closet

PLUMBING REQUIREMENTS - Summary Comparison of Provisions (Cont.)

STANDARD HOUSING CODE, 1979 EDITION (SBCCI)	BASIC PROPERTY MAINTENANCE CODE, 1978 EDITION (BOCA)	CODE ENFORCEMENT GUIDELINES FOR RESIDENTIAL REHABILITATION (BOCA)	HUD 4940.4, MINIMUM STANDARDS FOR REHABILITATION FOR RESIDENTIAL PROPERTIES, FEB. 1978
° 30 gal.	° adequate amount for required facilities and fixtures	° provide supply and distribution system	° quantities sufficient for needs of occupants ° suggests 30 gal. for gas or oil-fired and 52 gal. for electric water heaters 7/
° proper installation and maintenance ° operate independent of dwelling unit heating facilities	° approved installation, properly maintained and connected	° properly installed, connected and maintained	° no water heaters in sleeping rooms ° no gas or oil-fired heaters in bathroom closets, under stairways or unconfined spaces ° water heaters to be properly vented to exterior
° kitchen sink, lavatory, tub or shower, and water closet	° kitchen sink 5/, lavatory 4/ water closet, and bathtub or shower ° hot and cold water to every sink, lavatory and shower	° sink in kitchen ° water closet, lavatory 4/, and bathtub or shower in bathroom ° hot and cold water to every sink, lavatory and shower	° sink in kitchen ° water closet, bathtub or shower, and lavatory ° hot and cold water to every sink, lavatory and shower ° special provisions for elderly and handicapped
° YES - installation - maintenance	° YES - installation - maintenance - accessibility	° YES - installation - maintenance	° YES - installation - maintenance

NOTES:

4/ lavatory may be located in close proximity to door leading to water closet

5/ kitchen sink to be located apart from lavatory

7/ "off peak" restriction for capacity of electric water heaters

PLUMBING REQUIREMENTS - Summary Comparison of Provisions (Cont.)

**APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.**

**NEW YORK STATE MODEL
HOUSING CODE,
1974**

**UNIFORM HOUSING CODE,
1979 EDITION (ICBO)**

SUBJECT MATTER

<p>3. <u>EXISTING CONDITIONS</u> a. Allows continued use of existing plumbing systems</p>			
<p>4. <u>PROHIBITED USES</u> a. Specifically cited restrictions</p>		<p>° privies are prohibited on residential premises</p>	<p>° wooden sinks or other absorbent material not permitted</p>
<p>5. <u>WATER CONSERVATION</u> a. Water saving plumbing fixtures required</p>			
<p>E. <u>WATER SUPPLY TANKS</u> 1. <u>MAINTENANCE AND OPERATION</u> a. Provisions for water supply tanks</p>		<p>° YES - maintenance - construction - operation</p>	
<p>F. <u>STORM DRAINAGE SYSTEM</u> 1. <u>STORM WATER DISPOSAL</u> a. Covers disposal of storm water from roofs of buildings</p>	<p>° YES - gutters, leaders and downspouts</p>	<p>° YES - approved storm water disposal system</p>	

20. COMPARISON OF HEALTH AND SANITATION REQUIREMENTS*

A. Extent of Coverage

Provisions in this section of the comparison have as their purpose the prevention and control of communicable diseases and unhealthy conditions. They address those unwanted, unhealthy situations that are not conducive to good hygiene or a healthful environment for human habitability. All of the codes examined except one, Code Enforcement Guidelines for Residential Rehabilitation, provide some degree of coverage on the subject of health and sanitation. Organizationally, the requirements are placed in the codes under one of two main headings - either a "sanitation" requirements section or a section that delineates the respective responsibilities of owners and occupants for such matters as garbage disposal, trash removal or extermination of insects. In some of the codes, the health and sanitation provisions are intermingled with the plumbing requirements. Some variation exists among the codes studied on the restriction of metallic lead allowed in paint on surfaces.

B. Significant Findings

B.1 Among Housing Codes

The most extensive and detailed provisions on all aspects of health and sanitation are those contained in the APHA-CDC Recommended Housing and Occupancy Ordinance. Criteria

* The summary comparison charts relating to Health and Sanitation Requirements immediately follow this discussion on pp. 103. Appendix L at the rear of this report contains the actual (or in some cases abstracted) code provisions along with the appropriate source citation.

are given in such items as garbage can storage areas, requirements for rat-free premises and ratproof conditions, and extermination of insects. All of the other housing codes also address these items in varying degrees. The Uniform Housing Code's coverage is included in a chapter that defines the many factors that constitute a substandard building.

The housing codes do have some variation among them with regard to the restriction on lead-based paint and the level of toxic substances allowed. The abatement of the hazard from toxic substances is handled as follows by the housing codes studied.

<u>HOUSING CODE</u>	<u>TOXICITY LEVEL ALLOWED FOR NEW PAINT ON SURFACES OF DWELLING</u>
APHA-CDC Recommended Ordinance	no lead-based paint allowed
New York State Model Housing Code	less than 1% metallic lead
Uniform Housing Code	no requirement
Standard Housing Code	no requirement
Basic Property Maintenance Code	less than 0.5% lead

B.2 Between Rehabilitation Guidelines

Of the two building rehabilitation guideline documents, the HUD Minimum Standards addresses most of the health and sanitation items covered by the housing codes. It requires that disposal of trash and garbage be provided for, that the building be vermin proof and an inspection for infestations take place prior to rehabilitation activities. The Code Enforcement Guidelines for Residential Rehabilitation does not address any of these considerations. The only code area where differences were found to exist is in the toxicity levels allowed for paint. The Code Enforcement Guidelines for Residential Rehabilitation absolutely

require lead-free paint on interior surfaces and specifies that existing paint with more than 0.5% lead content be removed. This contrast with the HUD Minimum Standards which allows paint with no more than 0.6% Lead content to be used.

B.3 Between Housing Codes and Rehabilitation Guidelines

The differences are not significant in the treatment of health and sanitation issues, except for abatement of lead-based paint hazards, between the two types of documents on this element of comparison. Certain of the housing codes go into more details and the provisions are more germane with regard to owner/occupant obligations and responsibilities.

TABLE 13

HEALTH AND SANITATION - SUMMARY COMPARISON OF PROVISIONS

HEALTH AND SANITATION - Summary Comparison of Provisions

SUBJECT MATTER

APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.

NEW YORK STATE MODEL
HOUSING CODE,
1974

UNIFORM HOUSING CODE,
1979 EDITION (ICBO)

<p>A. <u>REFUSE COLLECTION AND DISPOSAL</u> 1. <u>REQUIREMENTS FOR TRASH, GARBAGE AND REFUSE</u> a. Covers collection, storage, handling and disposal of garbage and refuse</p>	<p>° YES - collection - storage - disposal</p>	<p>° YES - collection - storage - disposal</p>	<p>° YES <u>1/</u> - storage - disposal</p>
<p>b. Contains specific restrictions or limitations on disposal</p>	<p>° YES - bulk containers - extensive provisions on garbage containers - type of garbage disposal facilities</p>	<p>° YES - public halls - stairways - refrigerators with locks - abandoned vehicles</p>	<p>-----</p>
<p>B. <u>HARBORAGE OF INSECTS AND RODENTS</u> 1. <u>PROTECTIVE MEASURES</u> a. Requirements for protection from insects, vermin, rodents, and other infestation</p>	<p>° window screens ° extermination ° accumulations ° vermin-proofing ° storage procedures</p>	<p>° screens ° maintenance procedures ° self-closing doors</p>	<p>° infestations as determined by health officer <u>1/</u></p>
<p>C. <u>LEAD-BASED PAINT</u> 1. <u>ABATEMENT OF HAZARDS</u> a. Contains restrictions on use of lead-based paint and other toxic substances</p>	<p>° YES - maintain free from toxic substances - no lead-based paint on any surface</p>	<p>° YES - use no paint with more than 1% lead - treat surfaces that have existing hazards</p>	<p>-----</p>
<p>D. <u>MAINTENANCE OF SANITARY CONDITIONS</u> 1. <u>DWELLING UNIT SANITATION</u> a. Requires that sanitary conditions be maintained</p>	<p>° YES - primarily by occupant</p>	<p>° YES - primarily built elements (floors, walls, windows) - cosmetic features (peeling paint)</p>	<p>° YES - primarily plumbing facilities (bathroom, kitchen)</p>

NOTES:

1/ as related to definition of "Substandard Building"

HEALTH AND SANITATION (Cont.)

STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)

BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)

CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)

HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978

<ul style="list-style-type: none"> ° YES - collection - storage - disposal 	<ul style="list-style-type: none"> ° YES - collection - storage - disposal 	-----	<ul style="list-style-type: none"> ° YES - collection - storage - disposal
<ul style="list-style-type: none"> ° YES - abandoned vehicles - appliances - glass - building materials 	<ul style="list-style-type: none"> ° YES - public halls - stairways 	-----	<ul style="list-style-type: none"> ° YES - access to incinerator from public corridors
<ul style="list-style-type: none"> ° extermination of insects, rodents, etc. 	<ul style="list-style-type: none"> ° extermination ° proper precautions ° rodent-proof conditions 	-----	<ul style="list-style-type: none"> ° elimination of infestation ° protection ° correction of defects ° protection of openings and passageways
-----	<ul style="list-style-type: none"> ° YES - use no paint with more than 0.5% lead - treat surfaces that have existing hazards 	<ul style="list-style-type: none"> ° YES - use lead free paint on interior surfaces - remove paint having more than 0.5% lead content 	<ul style="list-style-type: none"> ° YES - use no paint with more than 0.6% lead - treat existing hazards as determined by local HUD office
<ul style="list-style-type: none"> ° YES - primarily plumbing fixtures 	<ul style="list-style-type: none"> ° YES - bathroom and kitchen floors - free from dampness - food preparation 	-----	-----

HEALTH AND SANITATION (Cont.)

SUBJECT MATTER

APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.

NEW YORK STATE MODEL
HOUSING CODE,
1974

UNIFORM HOUSING CODE,
1979 EDITION (ICBO)

4. Sanitary Conditions (cont.)

HEALTH AND SANITATION (Cont.)

STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)

BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)

CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)

HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978

o Every occupant of a structure or part thereof shall keep that part of the structure or premises thereof which he occupies, controls, or uses in a clean and sanitary condition. Every owner of dwelling containing two (2) or more dwelling units shall maintain in a clean and sanitary condition the shared or public areas of the dwelling and premises thereof.

(PM-801.1)

o All spaces used or intended to be used for food preparation shall contain suitable space and equipment to store, prepare and serve foods in a sanitary manner. There shall be adequate facilities and services for the sanitary disposal of food wastes and refuse, including facilities for temporary storage where necessary.

(PM-801.6)

o The owner or occupant of a structure or part thereof shall keep the supplied equipment and fixtures therein clean and sanitary, and shall be responsible for the exercise of reasonable care in their proper use and operation.

(PM-801.7)

o The equipment and fixtures furnished by the occupant of a structure shall be properly installed, and shall be maintained in good working condition, kept clean and sanitary, and free of defects, leaks or obstructions.

(PM-801.8)

HEALTH AND SANITATION (Cont.)

STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)

BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)

CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)

HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978

		<ul style="list-style-type: none"> ° YES - if free of fouling and clogging - no cross connections 	<ul style="list-style-type: none"> ° YES - if free of fouling and clogging - no cross connections
		<ul style="list-style-type: none"> ° YES - replaced plumbing fixtures to be water saving constructed <u>6/</u> 	
	<ul style="list-style-type: none"> ° YES - approved storm water disposal system 	<ul style="list-style-type: none"> ° YES - as required by applicable code or ordinance 	<ul style="list-style-type: none"> ° YES - controlled method of disposal

NOTES:

6/ as may be required by local energy and plumbing codes

21. COMPARISON OF ELEVATOR REQUIREMENTS*

A. Extent of Coverage

Provisions covering elevator, escalator, and dumbwaiter installations in multiple dwelling tall buildings are contained in three of the seven codes reviewed. The three codes are the New York State Model Housing Code, the Basic Property Maintenance Code, and the HUD Minimum Design Standards for Rehabilitation for Residential Properties. The provisions are general in nature with no specific requirements for periodic safety inspections or operational tests of existing installations. No direct reference is made to nationally recognized standards such as ANSI A17.1, "American National Standard Safety Code for Elevators, Dumbwaiters, Escalators and Moving Walks." In addition to the customary requirements for maintenance and upkeep, the most extensive coverage is that provided in the New York State Model Housing Code for such elements as fire hazards, placarding for design capacity, emergency communications, illumination, and safety devices. The Basic Property Maintenance Code limits coverage to general maintenance, safety, and fire hazards.

The Hud Minimum Design Standards has specific requirements that elevators be provided in rehabilitated buildings of certain height if they are to be used for elderly housing. Buildings required to be accessible by the physically handicapped must have at least one elevator comply with ANSI A17.1, ("Making Buildings and Facilities Accessible to, and Usable

by, the Physically Handicapped"). It further suggests that four story buildings with six or more living units per floor be elevated based on market acceptance considerations and that correspondingly taller buildings definitely provide elevator service. The Hud Minimum Property Standards for Multifamily Housing (HUD 4910.1) is referenced as a guide for the design and installation of new elevators in rehabilitated buildings.

*
The summary comparison charts relating to Elevators immediately follow this discussion on pp.111. Appendix M at the rear of this report contains the actual (or in some cases abstracted) code provisions along with the appropriate source citation.

TABLE 14

ELEVATORS - SUMMARY COMPARISON OF PROVISIONS

ELEVATORS - Summary Comparison of Provisions

APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.

NEW YORK STATE MODEL
HOUSING CODE,
1974

UNIFORM HOUSING CODE,
1979 EDITION (ICBO)

SUBJECT MATTER

SUBJECT MATTER	APHA-CDC RECOMMENDED HOUSING MAINTENANCE AND OCCUPANCY ORDINANCE, 1975 REV.	NEW YORK STATE MODEL HOUSING CODE, 1974	UNIFORM HOUSING CODE, 1979 EDITION (ICBO)
<p>A. <u>ELEVATORS, DUMBWAITERS AND ESCALATORS IN MULTIPLE DWELLINGS</u> 1. <u>CONSTRUCTION, INSTALLATION AND MAINTENANCE REQUIREMENTS</u> a. Safety and service ability</p>	<p>-----</p>	<p>° YES - elevators - escalators - dumbwaiters - hoistways - pits - machine rooms - safety devices</p>	<p>-----</p>

ELEVATORS (Cont.)

STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)

BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)

CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)

HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978

STANDARD HOUSING CODE, 1979 EDITION (SBCCI)	BASIC PROPERTY MAINTENANCE CODE, 1978 EDITION (BOCA)	CODE ENFORCEMENT GUIDELINES FOR RESIDENTIAL REHABILITATION (BOCA)	HUD 4940.4, MINIMUM STANDARDS FOR REHABILITATION FOR RESIDENTIAL PROPERTIES, FEB. 1978
-----	° YES - elevators - escalators - dumbwaiters	-----	° YES - elevators - specific provisions for: - elderly - handicapped

22. COMPARISON OF CHIMNEYS, VENTS AND INCINERATORS*

A. Extent of Coverage

Chimneys, vents and incinerators being integral parts of many existing buildings pose significant building safety hazards if not installed or maintained properly. The connotation of vents in this section of the comparison is intended to denote gas vents and exhaust flues from stoves, furnaces and water heaters. Code coverage was included in six of the seven documents reviewed. However, only the New York State Model Housing Code, had extensive provisions on all types of the subject components (i.e., chimneys, flues, gas vents, spark arresters, incinerators, etc.). The other codes concentrated on chimneys, primarily and some had a few provisions on vents. These codes referred to local regulations or a model building code for the conforming regulations. In some of the provisions, coverage is combined with that for fireplaces. For purposes of this study, the comparison of provisions on fireplaces is contained in the summary comparison table on "Fire Protection/Fire Safety" (see pp. 49).

B. Significant Findings

B.1 Among Housing Codes

The APHA-CDC Recommended Housing and Occupancy Ordinance defers to local regulations for construction and installation requirements of chimneys, flues, and smoke pipes. No maintenance or upkeep provisions are given.

* The summary comparison charts relating to Chimneys, Vents and Incinerators immediately follow this discussion on pp.117. Appendix N at the rear of this report contains the actual (or in some cases abstracted) code provisions along with the appropriate source citation.

As indicated above the New York State Model Housing Code has the most extensive coverage on chimneys, flues, gas vents and incinerators of all the codes examined. Many of the provisions, however, have a connotation that would make them applicable only to new construction or original installations of these devices. It would seem that many existing dwellings would not be able to comply with many of the provisions applicable to this class of components as the provisions are presented in this code.

Coverage in the Uniform Housing Code is limited to those several violations which are included in the overall definition of a "substandard building" in Chapter 10 of the code. The hazard as defined relates only to structural soundness of such installations. The Standard Housing Code does not have any provisions dealing with chimneys, vents or incinerators. The Basic Property Maintenance Code covers both the structural soundness and some of the fire hazard aspects of chimneys, flues, and vents.

B.2 Between Rehabilitation Guidelines

Chimneys, flues, and vents are required to be safe, sound, and smoketight or be capable of being restored to such a condition according to the Code Enforcement for Residential Rehabilitation. This code also requires the tops of chimneys to be extended as necessary to meet the draft provisions of applicable code requirements for new construction.

The HUD Minimum Standards for Rehabilitation covers structural, durability, and fire safety aspects of chimneys, vents and incinerators. It also provides guidance on existing unlined masonry chimneys and suggests that they be either removed or upgraded by the installation of a flue liner or corrosion-resistant pipe. The HUD document was the only code reviewed that specifically required compliance labeling of factory-built chimneys.

B.3 Between Housing Codes and Rehabilitation Guidelines

Where covered, housing codes concentrate on structural conditions with little on fire safety. Also, without specific provisions the housing codes stress construction and installation and not maintenance. The rehabilitation guidelines tend toward upgrading to the performance levels of new construction.

TABLE 15

CHIMNEYS, VENTS & INCINERATORS - SUMMARY COMPARISON OF PROVISIONS

CHIMNEYS, VENTS & INCINERATORS - Summary Comparison of Provisions

SUBJECT MATTER

**APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.**

**NEW YORK STATE MODEL
HOUSING CODE,
1974**

**UNIFORM HOUSING CODE,
1979 EDITION (ICBO)**

<p>A. CHIMNEYS, FLUES AND VENTS 1. CONSTRUCTION, INSTALLATION AND MAINTENANCE REQUIREMENTS a. Safety and serviceability</p>	<p>° In conformance with local regulations</p>	<p>° structurally safe, durable, smoke tight, noncombustible ° specific criteria given, - see Appendix N</p>	<p>° shall not settle, list or bulge 1/ ° shall be of proper size and strength 1/</p>
<p>b. Draft</p>		<p>° provide sufficient draft</p>	
<p>c. Fire Safety</p>		<p>° surface temperature of adjacent combustible construction not to exceed 175°F</p>	
<p>2. FACTORY-BUILT CHIMNEYS a. Product labeling and installation</p>			
<p>3. SPARK ARRESTERS a. Requires installation of spark arresters</p>	<p>° YES - on chimney or flue which emit spark - on incinerators</p>		

NOTES:

1/ as interpreted from Chapter 10's definition of a "substandard building"

**CHIMNEYS, VENTS & INCINERATORS -
Summary Comparison of Provisions (Cont.)**

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

	<ul style="list-style-type: none"> ° structurally safe, stable protected from elements 	<ul style="list-style-type: none"> ° structurally safe, durable smoke tight 	<ul style="list-style-type: none"> ° structurally safe, durable smoke tight ° flue liners suggested for chimneys
		<ul style="list-style-type: none"> ° extend top of chimneys to provide proper draw 2/ 	
	<ul style="list-style-type: none"> ° maintain required clearances to combustible materials 		
			<ul style="list-style-type: none"> ° labeled by Underwriters' Laboratory and installed in accordance with listing

NOTES:

2/ as required by the building code for new construction

CHIMNEYS, VENTS & INCINERATORS - Summary Comparison of Provisions (Cont.)

SUBJECT MATTER	APHA-CDC RECOMMENDED HOUSING MAINTENANCE AND OCCUPANCY ORDINANCE, 1975 REV.	NEW YORK STATE MODEL HOUSING CODE, 1974	UNIFORM HOUSING CODE, 1979 EDITION (ICBO)
B. <u>INCINERATORS</u> 1. <u>CONSTRUCTION, INSTALLATION, AND MAINTENANCE REQUIREMENTS</u> a. Safety and serviceability		° requirements for - capacity - continents - combustion - spark arrester - connections - alignment	
b. Service openings		° requirements for - accessibility - self-closing devices - hazzard signs and graphics	
c. Incinerator rooms and refuse rooms		° requirements for - heat transmission - safety devices	

**CHIMNEYS, VENTS & INCINERATORS -
Summary Comparison of Provisions (Cont.)**

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

STANDARD HOUSING CODE, 1979 EDITION (SBCCI)	BASIC PROPERTY MAINTENANCE CODE, 1978 EDITION (BOCA)	CODE ENFORCEMENT GUIDELINES FOR RESIDENTIAL REHABILITATION (BOCA)	HUD 4940.4, MINIMUM STANDARDS FOR REHABILITATION FOR RESIDENTIAL PROPERTIES, FEB. 1978
			<ul style="list-style-type: none"> ° shall be -structurally safe -smoke tight -withstand action of flue gases

23. COMPARISON OF NOISE ABATEMENT REQUIREMENTS*

A. Extent of Coverage

Meaningful regulatory provisions aimed at securing a quieter residential environment is a relatively new development although the problem of noise has been recognized as a threat to the public health for some time. One reason for this unfamiliarity with acoustics is that antinoise regulations have been difficult to enforce and thus perceived as being more or less unworkable.

Noise can come into the home not only from the outdoor environment, but also in the case of multiple dwellings from neighboring units. Provisions to control or isolate noise in buildings once they have been completed are difficult or impossible to enforce; they can only be met in the course of a buildings initial construction or major rehabilitation. For this reason, such requirements are not extensively covered, if at all, in housing codes.

The New York State Housing Code is the only housing code to even mention noise control and does so only briefly. It is covered in the form of a restriction on noise producing home occupations. The HUD Minimum Design Standards is the only other document reviewed that addresses the subject of noise control. It does so in the form of a guide section with suggested design and construction items of good practice to be followed when extensive rehabilitation or new construction are contemplated. It provides suggested minimum sound transmission class (STC) rating and impact noise ratios

* The summary comparison charts relating to Noise Abatement Requirements immediately follow this discussion on pp. 103. Appendix 0 at the rear of this report contains the actual (or in some cases abstracted) code provisions along with the appropriate source citation.

(INR) for the type of construction. Other considerations include isolation of mechanical equipment, ducts, piping, and improved spatial arrangements.

TABLE 16

NOISE ABATEMENT REQUIREMENTS - SUMMARY COMPARISON OF PROVISIONS

NOISE ABATEMENT REQUIREMENTS - Summary Comparison of Provisions

SUBJECT MATTER

**APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.**

**NEW YORK STATE MODEL
HOUSING CODE,
1974**

**UNIFORM HOUSING CODE,
1979 EDITION (ICBO)**

A. NOISE CONTROL
 1. NOISE REDUCTION AND ISOLATION
 a. Contains provisions on control of noise in or between dwelling units

° YES - prohibits certain home occupations which produce offensive noise

STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)

BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)

CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)

HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978

° YES - suggests various noise
reduction and noise isola-
tion techniques be considered
during design and construc-
tion

24. COMPARISON OF QUALITY OF MATERIALS AND PRODUCTS*

A. Extent of Coverage

Both of the rehabilitation guideline documents reviewed in this study devote a separate chapter or section of their provisions to the subject of quality assurance for construction materials and products used as replacements or additions in the rehabilitation of buildings. The Code Enforcement Guidelines for Residential Rehabilitation also includes "methods" of construction which implies workmanship standards and skill levels for fabrication and installation operations.

By contrast the housing codes do not cover the subject of compliance assurance except in the case of the APHA-CDE Recommended Housing Maintenance and Occupancy Ordinance and the Uniform Housing Code where incidental treatment is given.

The rehabilitation guideline documents require products to conform to nationally recognized standards and accepted practice standards. They conditionally allow use of second hand materials subject to administrative approval and in the case of the HUD Standards for Rehabilitation when such second hand items also meet the standards of equivalent new materials. Only the Code Enforcement Guidelines for Residential Rehabilitation provides an allowance for the use of alternate products and materials after analysis, evaluation, and approval of the appropriate regulatory authority. The HUD document specifically recommends that new products be labeled

* The summary comparison charts relating to Quality of Materials and Products immediately follow this discussion on pp 127. Appendix P at the rear of this report contains the actual (or in some cases the abstracted) code provisions along with the appropriate source citation.

as evidence of compliance for meeting recognized standards. The HUD document references the standards listed in the Minimum Property Standards while the Code Enforcement Guidelines for Residential Rehabilitation identifies those standards listed or referenced in the major model codes (e.g., those published by AINA, BOCA, ICBO, or SBCCI).

TABLE 17

QUALITY OF MATERIALS AND PRODUCTS - SUMMARY OF PROVISIONS

QUALITY OF MATERIALS AND PRODUCTS - Summary Comparison of Provisions

SUBJECT MATTER

**APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.**

**NEW YORK STATE MODEL
HOUSING CODE,
1974**

**UNIFORM HOUSING CODE,
1979 EDITION (ICBO)**

<p>A. <u>PROVISIONS FOR QUALITY OF CONSTRUCTION AND MATERIALS</u></p> <p>1. <u>APPLICABILITY/DEGREE OF CONFORMANCE</u></p> <p>a. Establishes general level of quality</p>	<p>° YES - emphasis on fire protection and local or state regulations</p>	<p>-----</p>	<p>° YES - as related to definition of "Substandard Buildings"</p>
<p>2. <u>USE OF SECOND-HAND MATERIALS</u></p> <p>a. Allows use of second-hand materials</p>	<p>-----</p>	<p>-----</p>	<p>-----</p>
<p>3. <u>USE OF ALTERNATE MATERIALS</u></p> <p>a. Provides for use of alternate materials</p>	<p>-----</p>	<p>-----</p>	<p>-----</p>
<p>4. <u>REFERENCE STANDARDS/PRODUCT LABELING</u></p> <p>a. Provides for reference standards or compliance labels to establish quality levels</p>			

QUALITY OF MATERIALS AND PRODUCTS (Cont.)

STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)

BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)

CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)

HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978

-----	-----	<ul style="list-style-type: none"> ° YES - for materials and methods used in building rehabilitation - conform to nationally recognized standards 	<ul style="list-style-type: none"> ° YES - structural strength - weather resistance - durability economy of maintenance - conform to accepted practice and national standards
-----	-----	<ul style="list-style-type: none"> ° YES - when approved by administrative authority 	<ul style="list-style-type: none"> ° YES - meet standards for new materials - approval of local authority
-----	-----	<ul style="list-style-type: none"> ° YES - when approved by administrative authority after analysis and evaluation - when satisfactory for intended use 	-----
-----	-----	<ul style="list-style-type: none"> ° YES - standards referenced by: AINA, BOCA, ICBO, SBCCI 	<ul style="list-style-type: none"> ° YES - nationally recognized standards - labels for new products and materials

25. GENERAL FINDINGS AND CONCLUSIONS

In addition to the specific findings cited in each of the individual comparisons of the major code areas, the following overall findings and conclusions resulted from this study:

1. There exists significant variations in similar provisions among the several codes. For example, for natural ventilation in habitable rooms, the code requirements vary from fixed dimensions of five square feet to five percent of the floor area to forty-five percent of the glazed area.
2. It is perceived that many of the code provisions have been developed empirically and are lacking in scientific merit. In this regard, a research agenda should be developed to identify those health, safety, and social well-being criteria from which meaningful provisions for housing codes and rehabilitation standards can be formulated. Also, it would be beneficial if commentaries could be provided for code provisions to aid interpretation and understanding.
3. It is unlikely that a significant fraction of existing dwellings, even those in sound condition, could comply with all of the requirements in the code documents.

In several instances housing codes defer to building codes or other standards for new construction. This creates a next to impossible condition for older dwellings because it amounts to the imposition of provisions on a retroactive basis with no consideration for the feasibility of such performance levels even being possible in vintage buildings.

4. The original intention of the documents, particularly the housing codes, was to provide a minimum of protection, for urban dwellings, primarily in the large

multifamily tenements in large cities. This setting still predominates in the codes studies, except the provisions have additional embellishments and performance levels have been raised. It is unreasonable to apply this same regulatory concept to the residential environment and living conditions of the suburbs or rural housing.

Consideration should be given to the varying environmental living conditions and need of urban, suburban, and rural housing and the different circumstance inherent in multifamily buildings in contrast to those more simplistic requirements of single-family dwellings in rural areas. This applies both to occupancy in housing standards as well as provisions for rehabilitation.

5. Differing terminology and ambiguous labels common to many of the codes makes comparison of provisions difficult and incomplete. The treatment and degree of detail in defining requirements varies significantly among the codes. This unevenness among the codes also makes comparison difficult and inequitable.

REFERENCES

1. Berry, Sandra A., Editor, "Proceedings of the National Conference on Regulatory Aspects of Building Rehabilitation," NBS Special Publication 549, National Bureau of Standards, Washington, D.C., August 1979.
2. Gross, James G., James H. Pielert and Patrick W. Cooke, "Impact of Building Regulations on Rehabilitation - Statutes and Technical Needs," NBS Technical Note 998, National Bureau of Standards, Washington, D.C. May 1979.
3. N. John Habraken, et al., "An Investigation of Regulatory Barriers to the Reuse of Existing Buildings," NBS GCE 78-139, National Bureau of Standards, Washington, D.C., January 1978.
4. "Impact of Building Codes on Housing Rehabilitation," Hearings before the Committee on Banking, Housing, and Urban Affairs - United States Senate, March 24, 1978.
5. 1980 Dodge/Sweet's Construction Outlook, McGraw-Hill Information Systems Company, 1221 Avenue of the Americas, New York, NY 10020.
6. APHA-CDC Recommended Housing Maintenance and Occupancy Ordinance, 1975 Revision; U.S. Department of Health, Education and Welfare, Public Health Service, Center for Disease Control, Atlanta, Georgia 30333.
7. New York State Model Housing Code, 1974 Edition; New York State Division of Housing and Community Renewal, Housing and Building Codes Bureau, Two World Trade Center; New York, NY 10047.
8. Uniform Housing Code, 1979 Edition; International Conference of Building Officials (ICBO), 5360 South Workman Mill Road, Whittier, CA 90601.
9. Standard Housing Code, 1979 Edition; Southern Building Code Congress International, Inc. (SBCCI), 900 Montclair Road, Birmingham, AL 35213.
10. BOCA Basic Property Maintenance Code, 1978 Edition; Building Officials and Code Administrators International, Inc. (BOCA), 17926 South Halsted, Homewood, IL 60430.
11. Code Enforcement Guidelines for Residential Rehabilitation, 1975 Edition; Building Officials and Code Administrators International, Inc., (BOCA), 17926 South Halsted, Homewood, IL 60430. (Also printed as Appendix B in the BOCA Basic Property Maintenance Code, 1978 Edition.)
12. Minimum Design Standards for Rehabilitation for Residential Properties, HUD Circular 4940.4, February 1978 (revised through August 22, 1978), U.S. Department Of Housing and Urban Development, Washington, D.C. 20410.

LIST OF APPENDICES

	<u>Page</u>
APPENDIX A - STRUCTURAL REQUIREMENTS	A-1
APPENDIX B - SPACE, OCCUPANCY AND FACILITY REQUIREMENTS	B-1
APPENDIX C - WINDOW AND DOORS	C-1
APPENDIX D - STAIRS, RAMPS, LANDINGS, PORCHES, BALCONIES	D-1
APPENDIX E - FIRE PROTECTION/FIRE SAFETY	E-1
APPENDIX F - MEANS OF EGRESS/EXITS	F-1
APPENDIX G - LIGHT AND ILLUMINATION	G-1
APPENDIX H - VENTILATION REQUIREMENTS	H-1
APPENDIX I - MECHANICAL REQUIREMENTS	I-1
APPENDIX J - ELECTRICAL REQUIREMENTS	J-1
APPENDIX K - PLUMBING REQUIREMENTS	K-1
APPENDIX L - HEALTH AND SANITATION	L-1
APPENDIX M - ELEVATORS	M-1
APPENDIX N - CHIMNEYS, VENTS AND INCINERATORS	N-1
APPENDIX O - NOISE ABATEMENT REQUIREMENTS	O-1
APPENDIX P - QUALITY OF MATERIALS AND PRODUCTS	P-1

Appendix A
STRUCTURAL REQUIREMENTS

STRUCTURAL REQUIREMENTS

SUBJECT MATTER	APHA-CDC RECOMMENDED HOUSING MAINTENANCE AND OCCUPANCY ORDINANCE, 1975 REV.	NEW YORK STATE MODEL HOUSING CODE, 1974	UNIFORM HOUSING CODE, 1979 EDITION (ICBO)
----------------	--	---	--

1. <u>Structural Soundness</u>	<p>o Every foundation, roof, floor, exterior and interior wall, ceiling, inside and outside stair, every porch, and every appurtenance thereto, shall be safe to use and capable of supporting the loads that normal use may cause to be placed thereon; and shall be kept in sound condition and good repair. Every inside and outside stair or step shall have uniform risers and uniform treads.</p> <p align="right">(7.01)</p>	<p>o Buildings and structures shall be structurally sound. Structural elements which conform to loading criteria specified in the State Building Construction Code, and stress limitations specified in general accepted standards, shall be deemed structurally sound.</p> <p align="right">(H1-301)</p>	<p>o Buildings or structures may be of any type of construction permitted by the Building Code. Roofs, floors, walls, foundations and all other structural components of buildings shall be capable of resisting any and all forces and loads to which they may be subjected. All structural elements shall be proportioned and joined in accordance with the stress limitations and design criteria as specified in the appropriate sections of the Building Code. Buildings of every permitted type of construction shall comply with the applicable requirements of the Building Code.</p> <p align="right">(601(a))</p>
2. <u>Protection from Weather and Other Elements</u>	<p>o Every foundation, roof and exterior wall, door, skylight and window shall be reasonably weather-tight, watertight and damp-free, and shall be kept in sound condition and good repair. Floors, interior walls and ceilings shall be sound and in good repair. All exterior wood surfaces, other than decay resistant woods, shall be protected from the elements and decay by paint which is not lead-based paint or by other protective covering or treatment. Walls shall be capable of affording privacy for the occupants.</p> <p align="right">(7.02)</p>	<p>o Buildings and structures shall be maintained weather-resistant and in good condition. (H1-301)</p> <p>o Exterior doors, windows, skylights, and similar openings shall be maintained weather-tight. (H1-302)</p>	<p>o Every building shall be weather protected so as to provide shelter for the occupants against the elements and to exclude dampness.</p> <p align="right">(601(b))</p> <p>o Faulty Weather Protection, which shall include but not be limited to the following:</p> <ol style="list-style-type: none"> 1. Deteriorated, crumbling or loose plaster. 2. Deteriorated or ineffective waterproofing of exterior walls, roof, foundations, or floors, including broken windows or doors.

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

<p>o Every structural element of the dwelling shall be maintained structurally sound and show no evidence of deterioration which would render them incapable of carrying loads which normal use may cause to be placed thereon. (305.17)</p>	<p>o The supporting structural members of every building shall be maintained structurally sound, not showing any evidence of deterioration which would render them incapable of carrying the imposed loads.</p> <p>o In every existing building used for business, industrial, mercantile or storage occupancy, in which heavy loads or concentrations occur or in which machinery is introduced, the owner or occupant shall cause the weight that each floor will safely sustain to be calculated by a registered architect or engineer and filed with the building official, and after such acceptance by the building official, posted on each floor in a conspicuous place. (PM-303.2)</p>	<p>o All components of the building shall be in sound condition or shall be restored to a sound condition. (B.7.1)</p>	<p>o All structural components of the building shall be in sound condition and considered serviceable for the expected useful life of the rehabilitated building. Sagging or out of plumb floors, chimneys, fireplaces, partitions or stairs, and bulging of exterior walls shall be restored as near as practical to an acceptable level or plumb position and supported or braced so as to prevent a recurrence of these conditions. Stair railings shall be rigid. Individual structural members in a seriously deteriorated condition shall be replaced. Loosely jointed structural members shall be restored to original rigidity. (7-2)</p>
<p>(No specific requirement)</p>	<p>o The exterior of a structure shall be maintained structurally sound and sanitary so as not to pose a threat to the health and safety of the occupants and so as to protect the occupants from the environment. (PM-302.1)</p> <p>o The interior of a structure and its equipment shall be maintained structurally sound and in a sanitary condition so as not to pose a threat to the health and safety of the occupants and protect the occupants from the environment. (PM-303.1)</p>	<p>o All exterior walls and roofs shall be weather-tight or shall be restored to a weather-tight condition. (B.7.1)</p>	<p>o The construction of the building will provide: (a) sufficient structural strength and rigidity, (b) adequate protection from corrosion, decay, insects and other destructive forces, (c) necessary resistance to the elements, (d) reasonable durability and economy of maintenance, and (e) acceptable quality of workmanship. (7-1)</p>

STRUCTURAL REQUIREMENTS (Cont.)

SUBJECT MATTER	APHA-CDC RECOMMENDED HOUSING MAINTENANCE AND OCCUPANCY ORDINANCE, 1975 REV.	NEW YORK STATE MODEL HOUSING CODE, 1974	UNIFORM HOUSING CODE, 1979 EDITION (ICBO)
2. <u>Protection form Weather and Other Elements</u> (cont.)	o Every premises shall be graded, drained, free of standing water, and maintained in a clean, sanitary and safe condition. (7.03)		3. Defective or lack of weather protection for exterior wall coverings, including lack of paint, or weathering due to lack of paint or other approved protective covering. 4. Broken, rotted, split, or buckled exterior wall coverings or roof coverings. (1001(h)) <u>(Definition of "Substandard Building")</u>
3. <u>Earthquake Hazard Reduction</u>	(No specific requirement)	(No specific requirement)	(No specific requirement)
4. <u>Protection from Termites, Decay, etc.</u>	(No specific requirement)	o Exterior surfaces shall be maintained in good condition. Surfaces, not inherently resistant to deterioration, shall be treated with a protective coating of paint, or other suitable preservative. (III-603)	o Protection of Materials. All wood shall be protected against termite damage and decay as provided in the Building Code. (601(c))

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

(No specific requirement)

(No specific requirement)

(No specific requirement)

o In Zone 3, as shown on Seismic Risk Maps in the Minimum Property Standards (HUD 4900.1 and 4910.1), a building's structural components and condition shall be evaluated by a registered engineer familiar with lateral force design. The evaluation shall include an examination of the structure for continuity, ductility, and resistance to lateral forces. Structural elements and connections between elements shall be strengthened and new elements provided as required. The degree of resistance provided shall be such as to prevent major collapse or loss of life due to earthquake forces. (7-2.b)

o All exterior wood surface, other than decay resistant woods, shall be protected from the elements and decay by painting or other protective covering or treatment. (305.14)

o All supporting structural members of all structures shall be kept structurally sound, free of deterioration and maintained capable of safely bearing the dead and live loads imposed upon them. (PM-302.2)

(No specific requirement)

o Each building and all exterior appurtenances on the site shall be effectively protected against rodents, termites or other vermin infestation
o A careful inspection by qualified persons shall be made of each building

STRUCTURAL REQUIREMENTS (Cont.)

APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.

NEW YORK STATE MODEL
HOUSING CODE,
1974

UNIFORM HOUSING CODE,
1979 EDITION (ICBO)

SUBJECT MATTER

4. Protection from Termites, Decay,
Etc. (cont.)

5. Exterior Elements

- Foundations

(No specific requirement)

o Exterior walls, including found-
ations, shall be maintained so that
ground and surface water does not
penetrate into basements and
cellars. (H1-302)

o Deteriorated or inadequate
foundations. (1001(c))
(Definition of "Substandard Building")

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

o In every building, cellars, basements and crawl spaces shall be maintained reasonably free from dampness to prevent conditions conducive to decay or deterioration of the structure. (PM-303.4)

and accessory structure on each property for evidence of actual or potential infestation or access channels. Existing buildings having defects that permit the entrance of rodents, termites or other vermin shall be corrected by appropriate preventive measures. Damaged or deteriorated structural members shall be replaced.

o An inspection shall be made of both interior and exterior construction for evidence of rot, rust or decay damage or other hazards. Where structural damage to such materials is found to exist, correction shall be provided. (7-7)

o The building foundation system shall be maintained in a safe manner and capable of supporting the load which normal use may cause to be placed thereon. (305.1)

o All foundation walls shall be maintained so as to carry the safe design and operating dead and live loads and shall be maintained plumb and free from open cracks and breaks, so as not to be detrimental to public safety and welfare. (PM-302.3.1)

(No specific requirement)

o Foundations and exterior walls shall provide safe and adequate support for all loads upon them, and prevent the entrance of water or excessive moisture. Serious defects shall be repaired and cracks effectively sealed, or replaced.

o Basement and foundation walls shall prevent the entrance of water or moisture into a basement or crawl space area. Cracks in the walls shall be effectively sealed, and loose or defective mortar joints shall be replaced. Where necessary, the

STRUCTURAL REQUIREMENTS (Cont.)

APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.

NEW YORK STATE MODEL
HOUSING CODE,
1974

UNIFORM HOUSING CODE,
1979 EDITION (ICBO)

SUBJECT MATTER

SUBJECT MATTER	APHA-CDC RECOMMENDED HOUSING MAINTENANCE AND OCCUPANCY ORDINANCE, 1975 REV.	NEW YORK STATE MODEL HOUSING CODE, 1974	UNIFORM HOUSING CODE, 1979 EDITION (ICBO)
5. <u>Exterior Elements</u> (cont.) - Foundations (cont.)			
- Exterior walls	(No specific requirement)	(No specific requirement)	(No specific requirement)
- Roofs	o Unless other provisions are made, gutters, leaders and down-spouts shall be provided and maintained in good working condition as to provide proper drainage of storm water. (7.04)	o Roofs shall be maintained in a watertight condition. (H1-302)	o Members of ceilings, roofs, ceiling and roof supports or other horizontal members which sag, split, or buckle due to defective material or deterioration. o Members of ceilings, roofs, ceiling and roof supports, or other horizontal members that are of insufficient size to carry imposed loads with safety. (1001(c)) (Definition of "Substandard Building")

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

			<p>interior or exterior face of the walls shall be dampproofed by bituminous coating and cement parging.</p> <ul style="list-style-type: none"> o Any deficiencies in proper grading or paving adjacent to the building shall be corrected to assure surface drainage away from basement walls. (7-3)
<ul style="list-style-type: none"> o Every exterior wall shall be free of holes, breaks, loose or rotting boards or timbers, and any other conditions which might admit rain, or dampness to the interior portions of the walls or to the occupied spaces of the building. All siding material shall be kept in repair. (305.2) 	<ul style="list-style-type: none"> o Every exterior wall shall be free of holes, breaks, loose or rotting boards or timbers, and any other conditions which might admit rain or dampness to the interior portions of the walls or to the occupied spaces of the building. All exterior surface material, including wood, composition, or metal siding, shall be maintained weatherproof and shall be properly surface coated when required to prevent deterioration. (PM-302.3.2) 	<p>(No specific requirement)</p>	<ul style="list-style-type: none"> o See "foundations" above (7-3) o Exterior wall covering. Repairs or replacement shall be made to defective exterior wall finish materials. Exterior walls shall be free of holes, cracks and broken or rotten finish materials. o Treatment of exterior surfaces to eliminate hazard of leadbased paint poisoning shall be as determined by the local HUD office. (8-2)
<ul style="list-style-type: none"> o Roofs shall be structurally sound and maintained in a safe manner and have no defects which might admit rain or cause dampness in the walls or interior portion of the building. (305.3) 	<ul style="list-style-type: none"> o The roof shall be structurally sound, tight, and not have defects which might admit rain, and roof drainage shall be adequate to prevent rain water from causing dampness in the walls or interior portion of the building. (PM-302.3.3) 	<ul style="list-style-type: none"> o Provisions shall be made for roof drainage as required by applicable code or ordinance. (B.7.1) 	<ul style="list-style-type: none"> o All roofs shall have a suitable, water-tight and reasonably durable covering free of holes, cracks, excessively worn surfaces or other defects. (8-2) o Each dwelling shall have a controlled method of disposal of water from roofs where necessary to prevent damage to the property, and to avoid causing unsightly staining of walls and windows where adequate roof overhangs are not provided. (8-3)

STRUCTURAL REQUIREMENTS (Cont.)

SUBJECT MATTER	APHA-CDC RECOMMENDED HOUSING MAINTENANCE AND OCCUPANCY ORDINANCE, 1975 REV.	NEW YORK STATE MODEL HOUSING CODE, 1974	UNIFORM HOUSING CODE, 1979 EDITION (ICBO)
-----------------------	--	--	--

5. Exterior Elements (cont.)
- Roofs (cont.)

- Appurtenances/decorative features

o Every porch and every appurtenance thereto shall be safe to use and capable of supporting the loads that normal use may cause to be placed thereon; and shall be kept in sound condition and good repair.
(7.01)

o Exterior stairs, porches, entrance platforms, fire escapes, and the railings thereon, shall be maintained in a safe and sound condition.
(H1-302)

(No specific requirement)

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

			<ul style="list-style-type: none"> o To prevent the entrance of water, all critical joints in exterior roof and wall construction which are exposed or partly exposed shall be protected by sheet metal or other suitable flashing material. (8-4) o Repairs to existing roofs should be complete and done in accordance with new construction standards unless the area to be repaired is less than 1/10th of the roof surface. o The placing of a new roof covering over an existing roof covering is not prohibited but should be governed by the material manufacturer's recommendations. (8-10, Guides) o An inspection should be made of the following locations to determine the effectiveness of present flashing: roof to wall intersections, roof to chimneys, roof valleys, pipe projections through roof, eaves and rake, and parapets. (8-11, Guides)
<ul style="list-style-type: none"> o Every inside and outside stair, porch and any appurtenance thereto shall be safe to use and capable of supporting the load that normal use may cause to be placed thereon; and shall be kept in sound condition and good repair. (305.5) 	<ul style="list-style-type: none"> o All cornices, entablatures, belt courses, corbels, terracotta trim, wall facings and similar decorative features shall be maintained in good repair with proper anchorage and in a safe condition. (PM-302.3.4) o All canopies, marquees, signs, metal awnings, stairways, fire escapes, standpipes, exhaust ducts 	<p>(No specific requirement)</p>	<ul style="list-style-type: none"> o All exterior appurtenances or accessory structures which serve no useful purpose, or those in a deteriorated condition which are not economically repairable, shall be removed. Such structures include porches, terraces, entrance platforms, garages, carports, walls, fences, and miscellaneous sheds. (4-8)

STRUCTURAL REQUIREMENTS (Cont.)

APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.

NEW YORK STATE MODEL
HOUSING CODE,
1974

UNIFORM HOUSING CODE,
1979 EDITION (ICBO)

SUBJECT MATTER

<p>5. <u>Exterior Elements</u> (cont.)</p> <p>- Appurtenances/decorative features (cont.)</p>			
<p>6. <u>Interior Elements</u></p> <p>- Floors, walls, ceilings</p>	<p>(No specific requirement)</p>	<ul style="list-style-type: none"> o Structural members shall be protected and maintained to resist and prevent deterioration. o Ceilings, walls, floors, and stairways shall be maintained in a safe and sound condition. o Toilet room, bathroom, and laundry room floors shall be maintained in a watertight condition. (H1-303) o Floors, walls, including windows and doors, ceilings, and other interior surfaces shall be maintained in good, clean, and sanitary condition. Peeling paint, cracked or loose plaster, decayed wood, and other defective surface conditions shall be eliminated. (H1-603) 	<ul style="list-style-type: none"> o Defective or deteriorated flooring or floor supports. o Flooring or floor supports of insufficient size to carry imposed loads with safety. o Members of walls, partitions, or other vertical supports that split, lean, list or buckle due to defective material or deterioration. o Members of walls, partitions, or other vertical supports that are of insufficient size to carry imposed loads with safety. (1001(c)) (Definition of "Substandard Building")

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BDCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BDCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

o and similar overhang extensions shall be maintained in good repair and be properly anchored so as to be kept in a safe and sound condition. They shall be protected from the elements and against decay and rust by the periodic application of a weather-coating material such as paint or other protective treatment. (PM-302.3.5)

o Every floor, interior wall and ceiling shall be substantially rodent proof; shall be kept in sound condition and good repair; and shall be safe to use and capable of supporting the load which normal use may cause to be placed thereon.
o Every toilet, bathroom and kitchen floor surface shall be constructed and maintained so as to be substantially impervious to water and so as to permit such floor to be easily kept in a clean and sanitary condition. (305.16)

o Floors, walls, including windows and doors, ceilings, and other interior surfaces shall be maintained in good, clean, and sanitary condition. Peeling paint, cracked or loose plaster, decayed wood, and other defective surface conditions shall be eliminated. (PM-303.3)
o Every toilet, bathroom and kitchen floor surface shall be constructed and maintained so as to be substantially impervious to water and so as to permit such floor to be easily kept in a clean and sanitary condition. (PM-303.3.2)

o Floors: Floors in rehabilitated buildings shall comply with the following provisions.
1. Floors of habitable or occupiable rooms in basements or cellars shall be surfaced or paved in an acceptable manner when in direct contact with the grade.
2. Floors in bathroom and water closet compartments and kitchens shall be substantially impervious to water, and shall be constructed so as to permit the floor to be easily kept in a clean and sanitary condition. The floor finish shall be of a durable, waterproof, non-absorptive material such as asphalt, vinyl-asbestos, vinyl-plastic, rubber ceramic tile, linoleum, concrete or other approved material.

o Partitions and other vertical supports which are to be continued in use shall be free of splits, excessive lean, buckling or other defects. (7-4)
o All floor construction shall provide safe and adequate support for all existing or probable loads and shall be reasonably free of objectionable vibration. A suitable surface for finish flooring shall exist or be provided.
o The floors of all basement or cellar furnace rooms, or basements containing habitable space, shall be paved in an acceptable manner, except under the following condition:
o Where the basement or cellar has existing wood floor construction over a crawl space which is in a sound, undamaged condition, it may remain provided the crawl space is adequately vented, and an acceptable ground cover material is installed on the ground in the crawl space. (7-5)

STRUCTURAL REQUIREMENTS (Cont.)

SUBJECT MATTER

APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.

NEW YORK STATE MODEL
HOUSING CODE,
1974

UNIFORM HOUSING CODE,
1979 EDITION (ICBO)

6. Interior Elements (cont.)

-Floors, walls, ceilings (cont.)

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

3. Finish floors in habitable rooms or common spaces shall meet the requirements of the building code for new construction.
- o Walls and ceilings: Interior walls and ceilings shall conform to the following requirements.
1. The finish surfaces shall not have excessive detrimental or unsightly surface irregularities or cracking.
 2. The finish surfaces shall be waterproof and hard surfaced in areas of rooms or spaces subject to direct moisture contact, such as bath and shower areas. Kitchens and baths shall be painted or papered to provide a washable finish surface.
 3. Existing interior finish surfaces containing a lead content greater than five-tenths (.5) of one (1) per cent shall be removed and replaced or covered with a lead-free material. (B.7.2)

- o All interior walls and ceilings shall provide (a) a finish surface without noticeable irregularities or cracking, (b) a waterproof and hard surface in spaces subject to moisture, (c) a suitable base for painting or other decoration and (d) reasonable durability and economy of maintenance.
- o Treatment of interior surfaces to eliminate hazard of lead-based paint poisoning shall be as determined by the local HUD office.
- o In painting for iderly abrasive wall finishes such as a sand finish shall not be used. (8-6)
- o Finish floors shall be appropriate to the use of the space; be in good condition, provide reasonable ease of maintenance, and an extended service life. (8-7)
- o All alterations, repairs and other improvement shall be harmonious and tie in with existing materials to remain in an acceptable manner. (8-9)
- o Doors, together with the anchorage of frames or bucks, with hardware are subject to hard usage and should be given particular attention. (7-10, Guides)
- o Finish floors in habitable rooms should be wood flooring, a resilient tile or sheet material, or carpeting

STRUCTURAL REQUIREMENTS (Cont.)

SUBJECT MATTER	APHA-CDC RECOMMENDED HOUSING MAINTENANCE AND OCCUPANCY ORDINANCE, 1975 REV.	NEW YORK STATE MODEL HOUSING CODE, 1974	UNIFORM HOUSING CODE, 1979 EDITION (ICBO)
6. <u>Interior Elements</u> (cont.) - Floors, walls, ceilings (cont.)			
7. <u>Thermal Protection</u>	(No specific requirement)	(No specific requirement)	(No specific requirement)

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

			<p>over a suitable underlayment. Concrete as a finish floor should be used only under special conditions, as in hot climates or where customs in a region indicate its general acceptability.</p> <ul style="list-style-type: none"> o Floors in kitchens and bathrooms should be of a durable, waterproof, non-absorptive material, such as asphalt, vinyl-asbestos, vinyl-plastic, rubber or ceramic tiles, or linoleum. Wood finish flooring should not be used for these rooms. o Appropriate finish flooring materials in public corridors and hallways are wood, a resilient flooring, or carpeting over an underlayment. In public entrance spaces or lobbies special consideration should be given to the selection of a finish flooring that is resistant to water and dirt. o The carpeting of stairways in multi-family buildings is not recommended. (8-13, Guides)
<p>(No specific requirement)</p>	<p>(No specific requirement)</p>	<p>(No specific requirement)</p>	<ul style="list-style-type: none"> o Ceiling insulation shall be provided over all habitable heated areas in locations having 2500 or more annual winter degree days as follows: <ul style="list-style-type: none"> (a) 2500 to 4500 degree days; R-11 insulation. (b) 4501 to 8000 degree days; R-19 insulation. (c) 8001 or more degree days; R-22 insulation.

STRUCTURAL REQUIREMENTS (Cont.)

SUBJECT MATTER

APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.

NEW YORK STATE MODEL
HOUSING CODE,
1974

UNIFORM HOUSING CODE,
1979 EDITION (ICBO)

7. Thermal Protection (cont.)

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

- o Ceiling insulation shall be provided over all habitable areas cooled by mechanical refrigeration. The amount of insulation shall be based upon summer cooling hours over 80 degrees Fahrenheit as follows:
- (a) Less than 400 cooling hours; R-11 insulation.
 - (b) 400 or more cooling hours; R-19 insulation.
- For buildings both cooled by mechanical refrigeration and heated, the more stringent of the above requirements shall be met.
- In all instances the adequacy of attic ventilation must be ascertained. Exemption of the ceiling insulation requirements will be allowed for buildings having flat roofs or other ceiling areas where installation is determined to be impractical unless ceiling finish is to be removed in the course of rehabilitation.
- o Under floor insulation shall be required beneath all habitable heated areas over unheated spaces in localities having 2500 or more annual winter degree days. Insulation may be installed between or under floor joists as follows:
- (a) 2500 to 4500 degree days; R-7 insulation.
 - (b) Above 4500 degree days; R-11 insulation.
- Exemption of under floor insulation will be allowed where reflective foil insulation is already installed.

STRUCTURAL REQUIREMENTS (Cont.)

SUBJECT MATTER	APHA-CDC RECOMMENDED HOUSING MAINTENANCE AND OCCUPANCY ORDINANCE, 1975 REV.	NEW YORK STATE MODEL HOUSING CODE, 1974	UNIFORM HOUSING CODE, 1979 EDITION (ICBO)
----------------	--	---	--

7. Thermal Protection (cont.)

8. Accessory Structures

o Accessory structures present or provided by the owner, agent, or tenant occupant on the premises of a dwelling shall be structurally sound, and be maintained in good repair and free of insects and rats, or such structures shall be removed from the premises. The exterior of such structures shall be made weather resistant through the use of decay-resistant materials or the use of lead-free paint or other preservatives. (7.08)

(No specific requirement)

(No specific requirement)

STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)

BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)

CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)

HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978

			<p>o When the exterior wall is repaired to the extent of removing the sheathing or inside wall covering, insulation shall be installed in the exposed portion of the wall cavity. The thermal insulation shall be such as to fill the exposed wall cavity or furring space without excessive compression. A vapor barrier shall be provided on the warm side of the cavity or furring space when insulation is added. (7-2)</p>
<p>o Garages, storage buildings and other accessory structures shall be maintained and kept in good repair and sound structural condition. (305.15)</p>	<p>(No specific requirement)</p>	<p>(No specific requirement)</p>	<p>o All exterior appurtenances or accessory structures which serve no useful purpose, or those in a deteriorated condition which are not economically repairable, shall be removed. Such structures include porches, terraces, entrance platforms, garages, carports, walls, fences, and miscellaneous sheds. (4-8)</p>
		<p>A-21</p>	

Appendix B
SPACE, OCCUPANCY AND FACILITY REQUIREMENTS

“

SPACE, OCCUPANCY AND FACILITY REQUIREMENTS

SUBJECT MATTER

**APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.**

**NEW YORK STATE MODEL
HOUSING CODE,
1974**

**UNIFORM HOUSING CODE,
1979 EDITION (ICBO)**

<p><u>1. Spatial Characteristics and Arrangement</u> - Minimum floor area for dwelling units and habitable rooms</p>	<p>o 150 sq. ft. for first occupant. o 100 sq. ft. for each additional occupant (8.01.01)</p>	<p>o At least one habitable room of 150 sq. ft. with minimum horizontal dimension of 10 ft. (H1-205.1b)</p>	<p>o At least one room of 150 sq. ft. with minimum horizontal dimension of 7 ft. (503 (b), (c))</p>
<p>- Minimum floor area for sleeping purposes</p>	<p>o 70 sq. ft. for one occupant. o 50 sq. ft. per occupant for rooms with more than <u>one</u> occupant.(8.06)</p>	<p>o 80 sq. ft. with minimum horizontal dimension of 7 ft.(H1-205.1c)</p>	<p>o 70 sq. ft. for one or two occupants. o 50 sq. ft. per occupant for rooms with more than <u>two</u> occupants. o Minimum horizontal dimension of 7 ft. (503 (b))</p>
<p>- Minimum floor area for kitchen</p>	<p>o An area adequate for circulation and required equipment (sink, cabinets or shelves, stove, and refrigerator). (4.01)</p>	<p>o 60 sq. ft. with minimum horizontal dimension of 7 ft. (H1-205.1c)</p>	<p>o provide a kitchen (no minimum floor area given). (505 (c))</p>

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

<p>o 150 sq. ft. for first occupant. o 100 sq. ft. for each additional occupant. (306.1)</p>	<p>o 150 sq. ft. for first occupant. o 100 sq. ft. for each additional occupant. (PM-404.1)</p>	<p>o As required by local code or ordinance. (B.4.1)</p>	<p>o 140 sq. ft. living room with 10 ft. minimum horizontal dimension for 1 & 2 bedroom living unit, o 150 sq. ft. living room with 10 ft. minimum horizontal dimension for 3 or more bedroom living unit. (4-2.b)</p>
<p>o 70 sq. ft. for one occupant. o 50 sq. ft. per occupant for rooms with more than <u>one</u> occupant. (306.2)</p>	<p>o 70 sq. ft. for one occupant. o 50 sq. ft. per occupant for rooms with more than <u>one</u> occupant. (PM-404.2)</p>	<p>(No specific requirement)</p>	<p>o 70 sq. ft. for single bedroom with minimum horizontal dimension of 7 ft. o 110 sq. ft. for double bedroom with minimum horizontal dimension of 8-2/3 ft. (4-2.b)</p>
<p>provide a kitchen, (no minimum floor area given).</p>	<p>o 50 sq. ft. for 1-5 occupants. o 60 sq. ft. for 6 or more occupants. (PM-404.3)</p>	<p>(No specific requirement)</p>	<p>o 50 sq. ft. for 1 & 2 bedroom living unit. o 60 sq. ft. for 3 or more bedroom living unit. o Minimum horizontal dimension of 5-1/3 ft. o Proportionately smaller kitchenettes are allowed. (4-2.b)</p>

SPACE, OCCUPANCY AND FACILITY REQUIREMENTS (Cont.)

SUBJECT MATTER

APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.

NEW YORK STATE MODEL
HOUSING CODE,
1974

UNIFORM HOUSING CODE,
1979 EDITION (ICBO)

<p>1. <u>Spatial Characteristics and Arrangement</u> (cont.)</p>	<ul style="list-style-type: none"> o 7 ft. o With sloping ceiling, at least 1/2 of floor area shall have 7 ft. ceiling height. o Ceiling heights less than 5 ft. shall not include that portion of floor area in computation of permissible floor area for occupancy. (8.03) 	<ul style="list-style-type: none"> o 7-1/2 ft. o With sloping ceiling, at least 1/2 of floor area shall have 7-1/2 ft. ceiling height. o Ceiling height less than 5 ft. shall not be included in computing required floor areas. (H1-205.1a) 	<ul style="list-style-type: none"> o 7-1/2 ft. o 7 ft. for kitchens, halls, bathrooms. o Spacing of exposed beam ceiling members determines method of measurement. o With sloping ceiling, at least 1/2 of floor area shall have prescribed ceiling height. o Ceiling height less than 5 ft. shall not be included in computing required floor areas. (503 (a))
<p>- Space for closets and general storage of personal effects</p>	<ul style="list-style-type: none"> o Minimum floor area of 4 sq. ft. of floor-to-ceiling height per occupant. (8.08) 	<p>(No specific requirement)</p>	<p>(No specific requirement)</p>
<p>- Criteria for habitable rooms below grade</p>	<ul style="list-style-type: none"> o Space more than 4 ft. below grade shall not be used as a habitable room. o Space up to 4 ft. below grade may be used if approved by the local authority. (8.04, 8.05) 	<ul style="list-style-type: none"> o Floor level to be not more than 4 ft. below average finished grade. o Shall conform to definition of a basement. (H1-205.2) 	<p>(No specific requirement)</p>

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

<ul style="list-style-type: none"> o 7 ft. over at least 1/2 of floor area. o 7 ft. for hallways, corridors, bathrooms, and kitchens measured to lowest projection from ceiling. o Ceiling height less than 5 ft. shall not be included in computing required floor areas. (3.6.3) 	<ul style="list-style-type: none"> o 7-1/3 ft. over minimum required floor area. o 7 ft. in attics and top half-stories over at least 1/3 of required floor area. o Ceiling height less than 5 ft. shall not be included in computing required floor areas. (PM-404.5) 	<ul style="list-style-type: none"> o 7 ft. o With sloping ceiling, at least 1/2 of floor area shall have 7 ft. ceiling height. o Ceiling height less than 5 ft. shall not be included in computing required floor areas. (B.4.1) 	<ul style="list-style-type: none"> o Shall permit average person to move about comfortably and create no unpleasant sensation. (4-2.c) o 7 ft. for habitable rooms. o 6-2/3 ft. for bathrooms, utility rooms. o 7-2/3 ft. for public corridors. o 7 ft. for hall within dwelling units. (Guides, 4-11.c)
<p>(No specific requirement)</p>	<p>(No specific requirement)</p>	<ul style="list-style-type: none"> o 100 cubic ft. per dwelling unit minimum. (B.4.1) 	<ul style="list-style-type: none"> o Closet space to be provided within bedrooms or conveniently nearby. o General storage to be provided for each living unit. (4-2h) o Minimum floor area of 4 sq. ft. per occupant. o Provide closets with shelf and hanging rod; closets should be not less than 2 ft. deep. (Guides, 4-11e)
<ul style="list-style-type: none"> o Floor and walls impervious to leakage of underground and surface runoff water; insulated against dampness. o Window area meets minimum light and ventilation requirements of Housing Code. o Required minimum window area located entirely above grade of the adjoining ground. o Openable window area meets minimum ventilation requirements (unless other acceptable means of ventilation is provided). (306.4) 	<ul style="list-style-type: none"> o Floors and walls to be watertight and insulated against moisture. o Total window area, total openable area and ceiling height are in accord with Basic Prop. Maint. Code o Required minimum window area to be located entirely above grade of the adjoining ground. (PM-403.3) 	<ul style="list-style-type: none"> o Must comply with all requirements of the Code Enforcement Guidelines for Residential Rehabilitation that pertain to habitable rooms. (B.4.1) 	<ul style="list-style-type: none"> o Must comply with same standards as for rooms above grade, particularly regarding light and ventilation requirements. (4.2.a(2))

SPACE, OCCUPANCY AND FACILITY REQUIREMENTS (Cont.)

SUBJECT MATTER

APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.

NEW YORK STATE MODEL
HOUSING CODE,
1974

UNIFORM HOUSING CODE,
1979 EDITION (ICBO)

1. Spatial Characteristics and Arrangements (cont.)
- Criteria for privacy and common access

- o Dwelling units containing two or more sleeping rooms shall be arranged such that no access to a bathroom or water closet compartment can be had by only going through another sleeping room.
- o Sleeping rooms shall not be used as the only means of access to other sleeping rooms.
- o A bathroom or water closet compartment shall not be used as the only passageway to any habitable room, hall, basement or to the exterior of the dwelling unit. (8.07)

- o Dwelling units shall be separate and apart from each other.
- o Sleeping rooms shall not be used as the only means of access to other sleeping rooms or habitable spaces.
- o Toilet rooms and bathrooms shall be designed and arranged to provide privacy.
- o Toilet rooms and bathrooms shall not be used as a passageway to a hall, or other spaces, or to the exterior.
- o Toilet room or bathroom shall be accessible from any sleeping room without passing through another sleeping room.
(H1-205.5 & H1-207.2)

(No specific requirement)

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

<ul style="list-style-type: none"> o The water closet, tub or shower and lavatory shall be located in a room affording privacy to the user and such room shall have a minimum floor space of 30 sq. ft. with no dimension less than 4 ft. o Bathrooms shall be accessible from habitable rooms, hallways, corridors or other protected or enclosed areas, not including kitchens or other food preparation. (302.2) 	<ul style="list-style-type: none"> o Dwelling units shall be separate and apart from each other. o Sleeping rooms shall not be used as the only means of access to other sleeping rooms or habitable spaces. o Habitable rooms, bathrooms, etc. accessory to a dwelling unit shall not open directly into or be used in conjunction with a food store, shop or similar room used for public purposes. o Sleeping rooms shall have access to at least one water closet without passing through another room used as a bedroom. o Bedrooms shall have access to at least one water closet located on the same floor. (PM-403.1 & PM-404.3) 	<ul style="list-style-type: none"> o Access to all parts of a dwelling unit shall be possible without passing outside the dwelling unit, or passing through another dwelling unit. o Every water closet, bathtub or shower shall be installed in a bathroom or water closet compartment which affords privacy to the user. o A bathroom shall not be used as the only passageway to a habitable room, hall, basement or dwelling unit. o A utility room, closet or storage room shall not be used as the only passageway to a habitable room or to a dwelling unit. (B.4.1) 	<ul style="list-style-type: none"> o A degree of privacy shall be provided commensurate with suitable living conditions by means of the proper location of exterior openings to exterior conditions, and by the interior arrangement of rooms. o Access to all parts of a living unit shall be possible without passing through a public hall. o Every water closet, bathtub or shower of a living unit shall be installed in a bathroom or toilet compartment which will afford privacy to the occupant. o A bathroom shall not be used as a passageway to a habitable room, hall, basement or to the exterior. o Where the access to an existing bathroom is through a bedroom in living units having more than one bedroom, this planning arrangement should be accepted if it is judged to be acceptable to the market. o A bathroom should not be separated from all bedrooms of a living unit by locating it a full story above or below the bedrooms. o A bedroom should not be used as the only means of access to another bedroom or habitable room. (4-2.d)
B-7			

SPACE, OCCUPANCY AND FACILITY REQUIREMENTS (Cont.)

SUBJECT MATTER

APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.

NEW YORK STATE MODEL
HOUSING CODE,
1974

UNIFORM HOUSING CODE,
1979 EDITION (ICBO)

Spatial Characteristics and Arrangement (cont.)

- Provision for efficiency type living units

(No specific requirement)

(No specific requirement)

- o Efficiency living units within an apartment house are allowed providing they meet the following requirements:
 1. The unit shall have a living room of not less than 220 sq. ft. of superficial floor area. An additional 100 sq. ft. of superficial floor area shall be provided for each occupant of such unit in excess of two.
 2. The unit shall be provided with a separate closet.
 3. The unit shall be provided with a kitchen sink, cooking appliance and refrigeration facilities each having a clear working space of not less than 30 inches in front. Light and ventilation conforming to this Code shall be provided.
 4. The unit shall be provided with a separate bathroom containing a water closet, lavatory, and bathtub or shower. (503 (b))

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

(No specific requirement)

(No specific requirement)

(No specific requirement)

(No specific requirement)

SPACE, OCCUPANCY AND FACILITY REQUIREMENTS (Cont.)

SUBJECT MATTER	APHA-CDC RECOMMENDED HOUSING MAINTENANCE AND OCCUPANCY ORDINANCE, 1975 REV.	NEW YORK STATE MODEL HOUSING CODE, 1974	UNIFORM HOUSING CODE, 1979 EDITION (ICBO)
----------------	--	---	--

2. Occupancy Limitations

- Maximum occupancy/over-crowding conditions in dwelling units

- o Not more than one family, plus two occupants unrelated to the family, except for guests or domestic employees, per dwelling unit. (8.02)
- o Total number of persons shall be less than two times the number of habitable rooms within the dwelling unit. (8.01.02)

- o One occupant per habitable room having a floor area of at least 80 but less than 120 sq. ft.
- o Two occupants per habitable room having a floor area of at least 120 but less than 180 sq. ft.
- o Three occupants per habitable room having a floor area of 180 sq. ft. or more. (III-203a)

o Defines all buildings or portions thereof occupied for living, sleeping, cooking or dining purposes which were not designed or intended to be used for such occupancies as a substandard building. (1001 (o))

- Prohibited uses

(No specific requirement)

- o It shall be prohibited to use for sleeping purposes any kitchen, non-inhabitable space, or public space.
- o It shall be prohibited to use any cellar space as habitable space.
- o Certain home occupations are specifically prohibited in dwelling units.
 - e.g., those which produce offensive noise, vibration, smoke, dust, odor, heat, or other objectionable effects. (III-204)

(No specific requirement)

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

- o Does not allow occupancy of dwelling units for purposes of living, sleeping, cooking or eating that do not comply with requirements of Standard Housing Code.
- o Applies also to vacant dwelling buildings. (301)

- o If any room used for residential purposes is over-crowded, the code official may order the number of persons sleeping or living in said room to be reduced so that there shall be not less than the total required area.

Space	Min. Occupancy area in sq.ft.		
	1-2 Occupants	3-5 Occupants	6 or more Occupants
Living Rm	No req.	120	150
Dining Rm	No req.	80	100
Kitchen	50	50	60
Bedrooms	70/one occupant, 50/second occupant and each addition thereof.		

(PM-404.3)

- o It shall be prohibited to use for sleeping purposes any kitchen, non-inhabitable space, or public space. (PM-404.4)

(No specific requirement)

- o Provisions governing size and means of light and ventilation apply to all habitable and occupiable spaces and rooms in rehabilitated buildings. (B.4)

(No specific requirement)

- o Provide each living unit with space necessary for suitable living, sleeping, cooking, and dining accommodations, storage, laundry and sanitary facilities; also, provide space of such size and dimensions so as to permit placement of furniture and essential equipment. (4-2 a(1))

(No specific requirement)

SPACE, OCCUPANCY AND FACILITY REQUIREMENTS (Cont.)

SUBJECT MATTER	APHA-CDC RECOMMENDED HOUSING MAINTENANCE AND OCCUPANCY ORDINANCE, 1975 REV.	NEW YORK STATE MODEL HOUSING CODE, 1974	UNIFORM HOUSING CODE, 1979 EDITION (ICBO)
----------------	--	---	--

3. Basic Facilities and Equipment

- Kitchen facilities

o A room or portion of a room in which food may be prepared or cooked with adequate circulation area and equipped with the following:
 -Kitchen sink in working condition connected to an approved water supply to provide an adequate amount of heated and unheated running water under pressure and connected to an approved sewer system,
 -Cabinets and/or shelves for storage of utensils and food.
 -Counter or table for food preparation; surfaces to be non-toxic and easily cleanable.
 -Stove for cooking food.
 -Refrigerator for safe storage of food at temperatures between 32° F and 45° F under ordinary maximum summer conditions. (4.01)

o (See item 1 above for spatial criteria)
 o Equipment for kitchen or kitchenette:
 -Approved-type cooking and refrigeration equipment of the stationary type properly connected to energy source and maintained in good operating condition.
 -Prohibits use of water-cooled gas refrigerators.
 -Provides specific requirements for air-cooled gas refrigerator installations.
 -Provides specific kitchen equipment requirements for communal kitchens. (H1-510)
 o Kitchen sink. (H1-502.5)

o Each dwelling unit to be provided with a kitchen.
 o Every kitchen shall be provided with a kitchen sink.
 -Wooden sinks or sinks of similarly absorbent material are not permitted. (505 (c))

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

- o Kitchen sink with an adequate supply of both cold and hot water. Water shall be supplied through an approved pipe distribution system connected to a potable water supply. (302.3)
- o Cooking equipment to be installed in accordance with the building, gas, or electrical code and be maintained in safe working condition. (302.6)

- o Requires a kitchen sink apart from the bathroom lavatory and be supplied with hot and cold running water. (PM-501.1.3)

- o Kitchen or kitchenette space which contains a sink with counter work space and has hot and cold running water
-Provision for installation of cooking and refrigeration equipment, and for storing kitchen utensils. (B.4.1)

- o Requires specific kitchen space to contain a sink with counter work space and hot and cold running water, adequate space for installing cooking and refrigeration equipment, and for storing cooking utensils.
- o Provides additional requirements for housing for the elderly. (4-2.e)
- o Suggests minimum areas of kitchen storage space:
-Total shelving in wall and base cabinets - 30 sq. ft.
-Drawer area - 5 sq. ft.
-Usable storage shelving in cooking range or under sink may be counted in total shelving needed.
(Guides, 4-11.d)

SPACE, OCCUPANCY AND FACILITY REQUIREMENTS (Cont.)

APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.

NEW YORK STATE MODEL
HOUSING CODE,
1974

UNIFORM HOUSING CODE,
1979 EDITION (ICBO)

SUBJECT MATTER

SUBJECT MATTER	APHA-CDC RECOMMENDED HOUSING MAINTENANCE AND OCCUPANCY ORDINANCE, 1975 REV.	NEW YORK STATE MODEL HOUSING CODE, 1974	UNIFORM HOUSING CODE, 1979 EDITION (ICBO)
<p>3. <u>Basic facilities and equipment</u> (cont.)</p> <p>- Bathroom facilities</p>	<p>o Provide a non-habitable room which affords privacy and equipped with: -Flush water closet, -Lavatory sink, and -Bathtub or shower.</p> <p>o Connect to approved water supply system and sewer system.</p> <p>o Water inlets for lavatory sinks and bathtubs to be located above overflow rim. (4.02,4.03,4.04)</p>	<p>o Provide within each dwelling unit: 1.Water closet, 2.Bathtub or shower, and 3.Lavatory. (III-505.5)</p>	<p>o Provide bathroom equipped with water closet, lavatory, and either a bathtub or shower.</p> <p>o Connect fixtures to a sanitary sewer or approved private disposal system. Provide hot and cold running water connected to an approved water supply system. All plumbing fixtures to be of an approved glazed earthenware type or similar non-absorbent material.(505 (a),(d))</p>
<p>- Laundry, utility and other facilities</p>	<p>o Facilities for the safe storage of drugs and household poisons.(4.07)</p>	<p>(No specific requirement)</p>	<p>(No specific requirement)</p>

Space, Occupancy and Facility Requirements (cont.)

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

- o Lavatory, tub or shower, and a water closet in good working condition and properly connected to an approved water and sewer system. (302.1)
- o Water closet, tub or shower, and lavatory to be located in a room affording privacy to the user. Room to have minimum floor space of 30 sq. ft., with no dimension less than 4 ft.
- o Bathrooms to be accessible from habitable rooms, hallways, or other protected areas, not including kitchens or other food preparation areas. (302.2)

- o A room separate from habitable rooms with privacy and a water closet supplied with cold running water. Lavatory may be placed in same room as water closet, or, if located in another room, the lavatory shall be located in close proximity. Lavatory shall be supplied with hot and cold running water. (PM-501.1.1)
- o A room with privacy and equipped with a bathtub or shower supplied with hot and cold running water. (PM-501.1.2)

- o Bathroom facilities shall include:
 - A water closet supplied with running water in an enclosed area not less than 30 inches in width with not less than 18 inches clear space in front of water closet.
 - A bathtub or shower with a supply of hot and cold running water, and in a bathroom separate from habitable rooms.
 - A lavatory with a supply of hot and cold running water, located in the same room as the water closet, or immediately adjacent thereto. (B.4.1)

- o Complete bathing and sanitary facilities shall be provided within each living unit; they shall consist of a water closet, a tub or shower, and a lavatory. Provide an adequate supply of hot water to the tub or shower stall and lavatory, and cold water to all fixtures. Arrangement of fixtures shall provide for the comfortable use of each fixture and permit at least a 90 degree door swing. Wall space shall be available for a mirror or medicine cabinet and for towel bars.
- o Provides additional requirements for housing for the elderly. (4-2.f)

(No specific requirement)

(No specific requirement)

- o Provide adequate space for laundry equipment, except that laundry facilities need not be provided in the dwelling unit if provision is made for such facilities in common space within the building, or in a nearby building. (B.4.1)

- o Provide adequate space for laundry equipment within each living unit, off a public corridor, or in a basement or other suitable space for use of all building occupants. (4-2.g)

Appendix C
WINDOWS AND DOORS

WINDOWS AND DOORS

SUBJECT MATTER

APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.

NEW YORK STATE MODEL
HOUSING CODE,
1974

UNIFORM HOUSING CODE,
1979 EDITION (ICBO)

1. Windows, Doors and Other Access
Openings

- Exterior protection/weather-
proofing

o Every window, exterior door and hatchway or similar device shall be so constructed to exclude insects during that portion of the year when there is a need for protection against mosquitoes, flies and other flying insects. (7.05)

o Exterior doors, windows, skylights and similar openings shall be maintained weather-tight. (HI-302)

(No specific requirement)

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

- o Every window, exterior door and basement or cellar door and hatchway shall be substantially weather-tight, watertight and rodent proof; and shall be kept in sound working condition and good repair. (305.7)
- o Window sash shall be properly fitted and weather-tight within the window frame. (305.9)
- o Every exterior door shall fit reasonably well within its frame so as to substantially exclude rain and wind from entering the dwelling building. (305.12)

- o Every window, door, and frame shall be constructed and maintained in such relation to the adjacent wall construction so as to exclude rain as completely as possible, and to substantially exclude wind from entering the dwelling or structure. (PM-302.4)
- o Every window and exterior door shall be fitted reasonably in its frame and be weather-tight and weather stripping shall be used to exclude wind or rain from entering the dwelling or structure and they shall be kept in sound condition and good repair. (PM-302.4.1)
- o Every basement or cellar window which is openable shall be supplied with rodent-proof shields, or storm windows or other material affording protection against the entry of rodents. (PM-302.4.7)
- o Every basement or cellar hatchway shall be so constructed and maintained as to prevent the entrance of rodents, rain, and surface drainage water into the structure. (PM-302.4.6)

(No specific requirement)

- o Doors and windows shall be adequately weather-stripped to reduce infiltration of air.
- o Replace loose or brittle caulking around door and window frames and install new caulking if none is present. (7-2.c)

WINDOWS AND DOORS (Cont.)

APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.

NEW YORK STATE MODEL
HOUSING CODE,
1974

UNIFORM HOUSING CODE,
1979 EDITION (ICBO)

SUBJECT MATTER

1. Windows, Doors and Other Access
Openings (cont.)

- Thermal protection

(No specific requirement)

(No specific requirement)

(No specific requirement)

- Glazing

(No specific requirement)

(No specific requirement)

(No specific requirement)

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

(No specific requirement)

(No specific requirement)

(No specific requirement)

o Necessary corrective measures shall be required to ensure that the building has the following minimum thermal protection:
Thermal protection for glazing and doors is required for all habitable heated areas in locations having more than 4500 annual winter degree days. This will be effected through the installation of storm doors and storm sash or inserts, or insulating glass. Material and installation may be the most economical locally acceptable, but must meet the U values as prescribed for new construction. Storm doors need not be applied to double front doors, double French doors, sliding glass doors or any other door for which the cost of custom manufacturing would be excessive. Casement and awning windows and other types of sash may be exempted on an individual basis in any instance due to discontinued sizes, unusual opening configuration for which no storm sash is manufactured and for which the cost of custom manufacturing would be excessive. (7-2.c)

Every window sash shall be fully supplied with glass window panes or an approved substitute which are without open cracks or holes. (305.8)

o Every required window sash shall be fully supplied with approved glazing materials which are without open cracks or holes. (PM-302.4.2)

(No specific requirement)

o Defective glass shall be replaced or corrected. (8-5)

WINDOWS AND DOORS (Cont.)

SUBJECT MATTER

APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.

NEW YORK STATE MODEL
HOUSING CODE,
1974

UNIFORM HOUSING CODE,
1979 EDITION (ICBO)

1. Windows, Doors and Other Access
Openings (cont.)

- Screens

o Every doorway used for ventilation and opening directly from a dwelling unit to outside space shall have supplied properly fitting screens having at least sixteen (16) mesh and with a selfclosing device.

(7.05.01)

o Every window or other device with openings to outdoor space, used for ventilation, shall be supplied with screens: except that such screens shall not be required (a) in rooms deemed by the (Appropriate Authority) to be located high enough as to be free from such insects, and/or (b) in rooms located in areas of this (name of Corporate Unit) which are deemed by the (Appropriate Authority) to have so few insects as to render screens unnecessary.

(7.05.02)

o All windows located at or near ground level used or intended to be used for ventilation, all other openings located at or near ground level, and all exterior doorways which might provide an entry for rats shall be supplied with adequate screens or such other devices as will effectively prevent the entrance of rats into the structure.

(7.06.02)

(No specific requirement)

(No specific requirement)

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

o Every door opening directly from a dwelling unit to outdoor space shall have screen doors with a self-closing device; and every window or other device with opening to outdoor space, used or intended to be used for ventilation, shall likewise have screens.

(305.13)

o Every door and window or other outside opening used for ventilation purposes shall be supplied with approved screening, and every swinging screen door shall have a self-closing device in good working condition, except that such screens shall not be required for areas on a floor above the fifth floor and screen doors shall not be required on non-residential structures or structures where the doors are required to swing out as required in the building code.

(PM-302.4.4)

(No specific requirement)

o Screens shall be provided for all windows, doors and other openings except in regions where their use is not customary or needed. Existing screens, and storm sash which are to be continued in use shall be in suitable condition to serve their intended purpose.

(8-5)

WINDOWS AND DOORS (Cont.)

SUBJECT MATTER

APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.

NEW YORK STATE MODEL
HOUSING CODE,
1974

UNIFORM HOUSING CODE,
1979 EDITION (ICBO)

<p>1. <u>Windows, Doors and Other Access Openings</u> (cont.)</p> <ul style="list-style-type: none"> - Hardware/physical security 	<p>o No person shall let to another for occupancy any dwelling or dwelling unit unless all exterior doors of the dwelling or dwelling unit are equipped with functioning locking devices. (4-09)</p>	<p>(No specific requirement)</p>	<p>(No specific requirement)</p>
<p>- Size</p>	<p>(No specific requirement)</p>	<p>(No specific requirement)</p>	<p>(No specific requirement)</p>

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

- o Every window required for light and ventilation for habitable rooms shall be capable of being easily opened and secured in position by window hardware. (305.10)
- o Every exterior door shall be provided with proper hardware and maintained in good condition (305.11)

- o Every window, other than a fixed window, shall be capable of being easily opened and shall be held in position by window hardware. (PM-302.4.3)
- o Every exterior door, door hinge, and door latch shall be maintained in good condition. Door locks in dwelling units shall be in good repair and capable of tightly securing the door. (PM-302.4.5)
- o Every door available as an exit shall be capable of being opened easily from the inside and without the use of a key. (PM-303.7)

(No specific requirement)

- o Existing Windows and Doors, including their hardware shall operate satisfactorily and give evidence of continuing acceptable service. Defective glass or locking mechanisms shall be replaced or corrected. (8-5)
- o Exterior doors shall have safe locks.
- o Provide a locking device on bath and toilet compartment doors. (4-4)

(No specific requirement)

(No specific requirement)

- o Doors and openings shall be six (6) feet eight (8) inches minimum in height with minimum widths as shown in the following Table
MINIMUM DOOR WIDTHS

Room or space	Minimum Door Width
Habitable or occupiable rooms	2 ft. 6 in.
Bathrooms, water closet compartments, storage closets (over 4 sq.ft. in area)	2 ft. 0 in.
Exit access or service stairs	2 ft. 6 in.
Exit doors	3 ft. 0 in.

- o Provide openings adequate in size to admit furniture and equipment to all spaces and to permit inspection for repair and maintenance.
- o Exterior Doors.
 - In housing for elderly, a primary entrance door shall be at least 3'-0" wide.
- o Interior Doors.
 - Provide a door for each opening to a bedroom, bathroom or toilet compartment.
 - In housing for elderly, doors in living units to habitable rooms and bath shall be at least 2'-8" wide. (4-4)
- o Exterior doors should be at least the following sizes:

WINDOWS AND DOORS (Cont.)

SUBJECT MATTER

APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.

NEW YORK STATE MODEL
HOUSING CODE,
1974

UNIFORM HOUSING CODE,
1979 EDITION (ICBO)

1. Windows, Doors and Other Access
Openings (cont.)
- Size (cont.)

STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)

BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)

CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)

HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978

o At least one (1) scuttle or access hatch to attic or crawl spaces shall be provided in a convenient location and shall have a minimum opening of eight-
een by twenty-two (18 x 22) inches, except where permanent access is provided. (B.7.2)

	Width	Height
1-Main entrance door	3'-0"(a)	6'6"
2-Service doors	2'-6"	6'6"
3-Garage doors, 1 car	8'-0"	6'4"
4-Garage doors, 2 car	12'-0"	6'4"
		clear opening
		clear opening

(a) Where serving 12 or more Living Units - 3'4"

o Interior Doors should be at least the following size:

- 1-Habitable rooms, 2 ft.-6 in. wide.
- 2-Bathrooms, toilet compartments and closets other than linen and broom, 2 ft.-0 in. wide.
- 3-Service stair doors, 2 ft.-6 in. wide.
- 4-Cased openings, 2 ft.-6 in. wide.
- 5-To public stairway enclosures, door - 3 ft.-0 in. wide; 2 ft.-4 in. wide.
- 6-Height of all interior doors, 6 ft.-6".

o Attic and Basementless Spaces.

Access to attics should be provided by means of conveniently located scuttles or a disappearing or permanently installed stairway. For attic and basementless spaces, the minimum access opening should be 14 x 22 inches. However, if either are to contain mechanical equipment, the access opening shall be of sufficient size to permit the removal and replacement of the equipment. (Guides, 4-13)

WINDOWS AND DOORS (Cont.)

SUBJECT MATTER

APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.

NEW YORK STATE MODEL
HOUSING CODE,
1974

UNIFORM HOUSING CODE,
1979 EDITION (ICBO)

1. Windows, Doors and Other Access
Openings (cont.)

(No specific requirement)

(No specific requirement)

(No specific requirement)

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

(No specific requirement)

(No specific requirement)

(No specific requirement)

- o The following guides should be used to determine the need for repair or replacing trim, window sash, doors and frames:
- a. Repair, if work can be done in place;
 - b. Replace, if the entire component needs to be removed in order to restore;
 - c. Refinish, if only the surface needs work in order to restore to new condition.(8-12, Guides)

Appendix D
STAIRS, RAMPS, LANDINGS, PORCHES, BALCONIES

STAIRS, RAMPS, LANDINGS, PORCHES, BALCONIES

SUBJECT MATTER

**APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.**

**NEW YORK STATE MODEL
HOUSING CODE,
1974**

**UNIFORM HOUSING CODE,
1979 EDITION (ICBO)**

1. Stairways, Ramps, Landings

- o Every inside and outside stair shall be safe to use and capable of supporting the loads that normal use may cause to be placed thereon; and shall be kept in sound condition and good repair.
- o Every inside and outside stair or step shall have uniform risers and uniform treads. (7.01)

- o Stairway treads, risers, and landings shall be arranged, constructed, proportioned, and maintained to provide safe ascent and descent.
- o Guard rails or balustrades, at least 33 inches in height above nosings and 36 inches in height above landings, shall be provided at open portions of stairways.
- o Handrails shall be provided on at least one side of stairways.
- o Where stairways provide access to roofs by means of scuttles or bulkhead doors, such scuttles or doors shall be readily openable from the interior without the use of tools or keys. (III-210.6)
- o Exterior stairs, porches, entrance platforms, fire escapes, and the railings thereon, shall be maintained in a safe and sound condition. (III-302)

(No specific requirement)

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

o Every inside and outside stair, porch and any appurtenances thereto shall be safe to use and capable of supporting the load that normal use may cause to be placed thereon; and shall be kept in sound condition and good repair. (305.5)

o Every stair, porch balcony, and all appurtenances attached thereto shall be so constructed as to be safe to use and capable of supporting the loads to which it is subjected and shall be kept in sound condition and good repair. (PM-302.3.7)

o Stairs and other exit facilities shall be adequate for safety as provided in the building code. (PM-303.8)

o All interior stairs and railings and other exit facilities of every structure shall be maintained in sound condition and good repair by replacing treads and risers that evidence excessive wear or are broken, warped or loose. Every inside stair shall be so constructed and maintained as to be safe to use and capable of supporting the anticipated loads. (PM-303.8.1)

o All stairways shall conform to the requirements of the building code. (B.7.2)

o All stairways shall provide safety of ascent and descent, and stairs and landings shall be arranged to permit adequate headroom and space for the passage of furniture and equipment.

o Existing stairways in sound condition to remain or to be repaired shall not be to any serious extent below minimum standards of good practice as to rise and run of steps, headroom, obstructions, stair width, landings, or railing protection.

o New stairways to be constructed shall comply with standards of good practice and be appropriate to the building and occupant load.

o In buildings required to be accessible to the physically handicapped, the maximum riser is 7-1/2 in. Winders or open risers shall not be used in such buildings. (4-5)

o Minimum standards for good practice in the planning and construction of stairways are contained in the Minimum Property Standards for Multi-family Housing (HUD 4910.1). (Guides, 4-14)

o The carpeting of stairways in multi-family buildings is not recommended. (8-13, Guides)

STAIRS, RAMPS, LANDINGS, PORCHES, BALCONIES (Cont.)

SUBJECT MATTER

**APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.**

**NEW YORK STATE MODEL
HOUSING CODE,
1974**

**UNIFORM HOUSING CODE,
1979 EDITION (ICBO)**

<p>2. <u>Handrails, Guardrails</u></p>	<p>o Structurally sound handrails shall be provided on any steps containing four (4) risers or more. Porches, patios, and/or balconies located more than three (3) feet higher than the adjacent are shall have structurally sound protective guard or handrails. (4.06)</p>	<p>o Handrails shall be provided on at least one side of stairways. (H1-210.6)</p> <p>o Railings or parapet walls shall be provided at open sides of balconies, mezzanines, porches, accessible roofs, exit passageways, areaways, motor vehicle parking decks and ramps, and around floor openings.</p> <p>o Railings or parapet walls shall be at least 3 feet 6 inches in height and designed to resist a lateral load, at the top, of at least 50 pounds per linear foot. Fixed openings in railings or parapet walls shall not exceed 6 inches in one dimension.</p> <p>o Wheel bumper blocks shall be provided at perimeter and around floor openings of open motor vehicle parking decks and ramps. Wheel bumper blocks shall be continuous, at least 8 inches in height, fastened to the floor, and designed to resist a minimum linear load of 300 pounds per foot. (H1-209)</p>	<p>(No specific requirements)</p>
<p>3. <u>Existing Porches, Appurtenances, Etc.</u></p>	<p>o Every porch and every appurtenance thereto shall be safe to use and capable of supporting the loads that normal use may cause to be placed thereon; and shall be kept in sound condition and good repair. (7.01)</p>	<p>o Exterior stairs, porches, entrance platforms, fire escapes, and the railings thereon, shall be maintained in a safe and sound condition. (H1-302)</p>	<p>(No specific requirements)</p>

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

<p>o Protective railing shall be required on any unenclosed structure over thirty (30) inches from the ground level or on any steps containing four (4) risers or more. (305.6)</p>	<p>o Every flight of stairs, which is more than three (3) risers high, shall have handrails which shall be located as required by the building code, and every open portion of a stair, porch, landing and balcony which is more than thirty (30) inches above the floor or grade below shall have guardrails. Every handrail and guardrail shall be firmly fastened and capable of bearing normally imposed loads and shall be maintained in good condition. (PN-303.8.2)</p>	<p>o (No specific requirement)</p>	<p>o Public stairs shall have handrails in accordance with ANSI A117.1. (4-5)</p>
<p>o Every inside and outside stair, porch and any appurtenance thereto shall be safe to use and capable of supporting the load that normal use may cause to be placed thereon; and shall be kept in sound condition and good repair. (305.5)</p>	<p>o Every porch, balcony and all appurtenances attached thereto shall be so constructed as to be safe to use and capable of supporting the loads to which it is subjected and shall be kept in sound condition and good repair. (PN-302.3.7)</p>	<p>(No specific requirements)</p> <p style="text-align: center;">D-5</p>	<p>o All exterior appurtenances or accessory structures which serve no useful purpose, or those in a deteriorated condition which are not economically repairable, shall be removed. Such structures include porches, terraces, entrance platforms, garages, carports, walls, fences, and miscellaneous sheds. (4-8)</p>

Appendix E
FIRE PROTECTION/FIRE SAFETY

FIRE PROTECTION/FIRE SAFETY

SUBJECT MATTER

APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.

NEW YORK STATE MODEL
HOUSING CODE,
1974

UNIFORM HOUSING CODE,
1979 EDITION (ICBO)

1. <u>Responsibility/Scope</u>	(No specific requirement)	o Buildings and structures shall be constructed and maintained to prevent and avoid fire hazards, and in a manner conducive to fire safety. (H1-401)	o All buildings or portions thereof shall be provided with the degree of fire-resistive construction as required by the Building Code for the appropriate occupancy, type of construction and location on property; and shall be provided with the appropriate fire-extinguishing systems or equipment required by Chapter 38 of the Building Code. (901)
2. <u>Fire Resistance/Fire Spread Requirements</u>	(No specific requirement)	o Floors, walls, ceilings, soffits, and other components required to provide a fire-resistive enclosure or separation, and construction required to protect structural members, shall be maintained so that the respective fire-resistance rating of the enclosure, separation, or construction is preserved. o In buildings of mixed occupancy - nonresidential space shall be separated from residential space by fire separations having a fire-resistance rating of at least 1 hour. o In multiple dwellings - floor construction above a cellar or basement shall have a fire-resistance rating of at least 1 hour, except such requirement shall not apply where the cellar or basement is completely protected by an automatic sprinkler system. o In multiple dwellings - spaces used as carpenter, repair, or paint.	(No specific requirement)

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

o A person shall not occupy as owner-occupant or shall let to another for occupancy, any building or structure which does not comply with the applicable provisions of the fire prevention code of the applicable governing body. (302.8)

o The owner of the structure shall provide and maintain such fire safety facilities and equipment in compliance with these requirements and the fire prevention code. A person shall not occupy as owner-occupant or let to another for occupancy or use any premises which do not comply with the following requirements of this article. (PM-700.2)

o The provisions of this section shall govern the interior, built-in fire protection features of rehabilitated residential buildings. (B.6)

o Life safety provisions shall comply with 405-5.2 of HEIGHT AND AREA LIMITATIONS, 405-6 EXITS, 405-8 INTERIOR FINISH, 405-14 FIRE ALARM AND EXTINGUISHING SYSTEMS and 405-15 STANDPIPES of the Minimum Property Standards as applicable. When buildings cannot be rehabilitated in substantial conformance with these criteria, alternate methods of protection shall be provided. (5-2)

(No specific requirement)

o Floors, walls, ceilings, and other elements and components required to develop a fire-resistance rating shall be maintained so that the respective fire-resistance rating of the enclosure, separation, or construction is preserved. (PM-703.1)

o Dwelling-garage separation: The common wall or floor-ceiling, if any, between a garage and a dwelling shall be protected as required by the building code for new construction
o Flame spread requirements: The maximum flame spread rating for all interior exposed surfaces of the dwelling shall be that required by the building code for new construction
o Roof covering: Roofing materials shall be as required by the building code for new construction. (B.6.1)

(Section 405-8 of the Minimum Property Standards requires - INTERIOR FINISH
Flame Spread Limitations
a. The surface flame spread rating of interior finish materials of walls, ceilings and kitchen cabinets shall not exceed 200 determined by an independent testing laboratory or recognized association laboratory in accordance with ASTM E84. ASTM E162 may be used for kitchen cabinets and similar items
b. Flame spread of kitchen cabinets shall apply to combustible cabinet doors, exposed end panels and bottoms and counter tops. Cabinet frame rails, stiles, mullions and toe strips are exempted.
Doors (except closet doors exceeding 6 ft. in width), trim around openings, baseboards, moldings and chair rails may be excluded in the calculation of flame spread limitations

FIRE PROTECTION/FIRE SAFETY (Cont.)

SUBJECT MATTER

APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.

NEW YORK STATE MODEL
HOUSING CODE,
1974

UNIFORM HOUSING CODE,
1979 EDITION (ICBO)

2. Fire Resistance/Fire Spread Requirements (cont.)

- shops, and spaces where flammable or combustible materials are stored, shall be enclosed by construction having a fire-resistance rating of at least 1 hour
- o In multiple dwellings - central kitchens shall be separated from central dining rooms by construction having a fire-resistance rating of at least 1 hour
 - o A garage within, or attached to, a building containing a residential occupancy shall be separated from the residential portion of the building by construction capable of preventing the passage of fumes and vapors and having a fire-resistance rating as follows: for one- and two-family dwellings, at least 1/2 hour; for multiple dwellings, at least 1 hour
 - o Interior finish in enclosed exits shall have a flame-spread rating of not more than 75
 - o Draperies and decorative materials located in enclosed exits or public spaces shall be noncombustible or flame-resistant (H1-404)

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

Marking
Except for conventional homogeneous materials whose flame spread characteristics have been determined by test and are in common usage, all finishing materials shall be marked to indicate the maximum flame spread rating)

FIRE PROTECTION/FIRE SAFETY (Cont.)

SUBJECT MATTER

APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.

NEW YORK STATE MODEL
HOUSING CODE,
1974

UNIFORM HOUSING CODE,
1979 EDITION (ICBO)

3. Fire Protection Systems and
Equipment

(No specific requirement)

- o Self-closing devices of exit doors shall be maintained in good operating condition. Only approved-type magnetic hold-open devices connected to fire protection systems may be used to hold open exit doors, except that no devices or objects may be used to hold open exit doors in stairway enclosures at floor landings. (H1-404)
- o Fire protection equipment shall be provided in readily accessible locations, and clearly visible, as follows:
 - 1-In boiler or furnace rooms having fuel-burning equipment with a capacity of up to 1,000,000 Btu per hour of individual or combined rating, at least one approved multi-purpose dry chemical type portable fire extinguisher; in boiler or furnace rooms with fuel-burning equipment having a capacity in excess of 1,000,000 Btu per hour, at least two such portable fire extinguishers.
 - 2-In dormitory units, one approved Class A type portable fire extinguisher for each multiple of 1,250 square feet of floor area, or fraction thereof, in excess of 1,250 square feet of floor area.
 - 3-In central kitchens, one approved multi-purpose dry chemical type portable fire extinguisher for each multiple of

(No specific requirement)

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

(No specific requirement)

- o All fire protection systems and equipment shall be maintained in proper operating condition at all times. (PM-704.1)
- o Fire alarms and detecting systems shall be maintained and be suitable for their respective purposes. (PM-704.1)
- o Fire suppression systems shall be maintained in good condition, free from mechanical injury. Sprinkler heads shall be maintained clean, free of corrosion and paint, and not bent or damaged. (PM-704.2)
- o Hose stations shall be identified and accessible. The hose shall be in proper position, ready for operation, dry, and free of deterioration. (PM-704.3)
- o All portable fire extinguishers shall be visible and accessible, and maintained in an efficient and safe operating condition. (PM-704.4)

- o Fire protection equipment: Fire protection equipment shall meet the requirements of all applicable codes or ordinances. (B/6/1)

(Section 405-14 of the Minimum Property Standards requires -
FIRE ALARM SYSTEMS

- o Not less than one automatic smoke detector, which may be a single-station alarm device, shall be installed in each living unit near the sleeping areas. For two story dwellings one smoke detector in the upper hall at head of the stairway is sufficient when the stairway is open and the lower sleeping area, if any, is adjacent to the open stairway.
- o Smoke detectors shall be either the ionization chamber or the photoelectric type and shall comply with all the requirements of Underwriters Laboratories Standard No. 167 for ionization and 168 for photoelectric type detectors. Detectors shall bear the label of a testing and approval laboratory indicates the smoke detectors have been tested and approved under the requirements of UL 167 and 168. The testing and approved laboratory shall be one which maintains a periodic follow-up service of the labeled devices to ensure compliance with the original approval.
- o All smoke detectors shall operate from the dwelling's electrical circuit. The detector mounting shall be permanently attached to an electrical outlet box and the detector wired into a general electrical circuit. There shall be no switches in the circuit to the detector other than the overcurrent protective device protecting the branch circuit. There shall be no switches in the circuit to the detector other than the overcurrent protective device protecting the branch circuit.)

FIRE PROTECTION/FIRE SAFETY (Cont.)

SUBJECT MATTER

APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.

NEW YORK STATE MODEL
HOUSING CODE,
1974

UNIFORM HOUSING CODE,
1979 EDITION (ICBO)

3. Fire Protection Systems and Equip-
ment (cont.)

1,000 square feet of floor area,
or fraction thereof
4-In public spaces, one approved
Class A type portable fire ex-
tinguisher for each multiple of
2,500 square feet of floor area,
or fraction thereof, in excess of
2,500 square feet of floor area
5-In garages serving multiple
dwellings, one approved multi-
purpose dry chemical type port-
able fire extinguisher for each
multiple of 2,500 square feet of
floor area, or fraction thereof.
o Where an approved automatic fire
extinguishing system is provided,
portable fire extinguishers are
not required. (H1-406)

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

FIRE PROTECTION/FIRE SAFETY (Cont.)

SUBJECT MATTER

APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.

NEW YORK STATE MODEL
HOUSING CODE,
1974

UNIFORM HOUSING CODE,
1979 EDITION (ICBO)

4. Prohibited Accumulations and Storage

(No specific requirement)

- o No highly flammable or explosive matter, such as paints, volatile oils, and cleaning fluids, or combustible refuse, such as waste paper, boxes, and rags, shall be accumulated or stored on residential premises, except in spaces in conformance with section H1-404d.
- o Nothing shall be placed, accumulated, or stored on residential premises which obstructs egress from stairways, passageways, doors, windows, fire escapes, or other means of exit, or interferes with the use of fire-fighting equipment or performance by fire-fighting personnel. (H1-402)
- o Vending machines and other equipment or materials shall not be located in lobbies, corridors, or passageways if it constitutes a fire hazard or interferes with the exit facilities. (H1-404)

(No specific requirement)

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

(No specific requirement)

- o Waste, refuse, or other materials shall not be allowed to accumulate in stairways, passageways, doors, windows, fire escapes, or other means of egress. (PM-702.1)
- o Highly flammable or explosive matter, such as paints, volatile oils, and cleaning fluids, or combustible refuse, such as waste paper, boxes, and rags, shall not be accumulated or stored on residential premises except in reasonable quantities consistent with normal usage. (PM-702.2)
- o A dwelling unit or rooming unit shall not be located within a structure containing an establishment handling, dispensing or storing flammable liquids with a flash point of one hundred ten (110) degrees F. or lower, except as provided for in the building code. (PM-702.3)
- o Non-residential structures shall be permitted to store combustible or flammable materials provided they are confined to approved storage areas and comply with applicable requirements of the building and fire codes for the appropriate use group classification. (PM-702.4)

(No specific requirement)

(No specific requirement)

FIRE PROTECTION/FIRE SAFETY (Cont.)

SUBJECT MATTER

APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.

NEW YORK STATE MODEL
HOUSING CODE,
1974

UNIFORM HOUSING CODE,
1979 EDITION (ICBO)

5. Fireplaces

(No specific requirement)

- o Fireplaces, and other construction and devices intended for use similar to a fireplace, shall be stable and structurally safe and connected to approved chimneys.
- o Fireplaces and similar construction and devices shall be installed and maintained so that when in use adjacent combustible materials or construction will not be heated to a temperature exceeding 175°F., nor ignited by sparks or embers from the fire. (H1-405)

(No specific requirement)

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

(No specific requirement)

(No specific requirement)

(No specific requirement)

(No specific requirement)

Appendix F
MEANS OF EGRESS/EXITS

MEANS OF EGRESS/EXITS

SUBJECT MATTER	APHA-CDC RECOMMENDED HOUSING MAINTENANCE AND OCCUPANCY ORDINANCE, 1975 REV.	NEW YORK STATE MODEL HOUSING CODE, 1974	UNIFORM HOUSING CODE, 1979 EDITION (ICBO)
----------------	--	---	--

1. Means of escape requirements

- Number of exits

- o Every dwelling unit shall have at least 2 means of egress leading to safe and open space at ground level
- o Every dwelling unit in a multiple dwelling shall have immediate access to 2 or more approved means of egress leading to safe and open space at ground level. (4.05)

- o In two-family dwellings three stories or less in height, and in one family dwellings, in addition to the primary exit there shall be provided an emergency exit from each story. (H1-210.2b)
- o In two-family dwellings more than three stories in height, exits shall comply with any of the following:
 - 1-One interior stairway enclosed in construction having at least a 3/4 hour fire-resistance rating with openings in such enclosure protected by self-closing doors; or
 - 2-Two interior stairways with all doors opening upon such stairways equipped with a self-closing device; or
 - 3-One interior stairway with all doors opening upon such stairway equipped with a self-closing device, and one exterior stairway or fire escape providing exit from each dwelling unit on any story; or
 - 4-One interior stairway equipped with an automatic sprinkler system, with all doors opening upon such stairway equipped with a self-closing device. (H1-210.2c)
- o (Further provisions given for multiple dwellings in H1-210.3)

- o Every dwelling unit or guest room shall have access directly to the outside or to a public corridor. All buildings or portions thereof shall be provided with exits, exitways, and appurtenances as required by Chapter 33 of the Building Code.
- o Every sleeping room below the fourth story shall have at least one operable window or exterior door approved for emergency egress or rescue. The units shall be operable from the inside to provide a full clear opening without the use of separate tools. (801)

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

o Every dwelling unit shall have safe, unobstructed means of egress leading to a safe and open space at ground level.

(305.4)

o A safe, continuous and unobstructed means of egress shall be provided from the interior of a structure to the exterior at a street, or to a yard, court, or passageway leading to a public open area at grade.

(PM-701.1)

o Safe means of egress from rehabilitated buildings per requirements of the building code applicable to one and two family dwelling occupancy or multi-family dwelling occupancy constitute the exit requirements.(B.5.1 & B.5.2)

o Objective is to provide means of egress which will permit persons to leave the building with safety in an emergency, and permit access for fire control personnel (5-1)

o Comply with Intent of Section 405-6 EXITS of the Minimum Property Standards - also, alternate methods of protection are allowed (5-2) (Section 405-6 of the MPS requires at least two means of egress from each room used for sleeping, living or dining. One of the exits to be a door or stairway providing a means of unobstructed travel to the outside at street or ground level.)

MEANS OF EGRESS/EXITS (Cont.)

SUBJECT MATTER

**APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.**

**NEW YORK STATE MODEL
HOUSING CODE,
1974**

**UNIFORM HOUSING CODE,
1979 EDITION (ICBO)**

<p>1. <u>Means of escape requirements</u> (cont) - Clearance/openings for emergency egress or rescue</p>	<p>o Bedrooms located below the fourth floor shall be provided with an exterior door or window of such dimensions as to be used as a means of emergency egress. (4.05)</p>	<p>o At least 4 sq. ft. of openable area -Min. dimension of 18 inches -Max. height of 42 inches above floor. (H1-210.2b) o Ceiling height for corridors and hallways in multiple dwellings -Min. of 7 ft. 6 inches -Min. head room for stairways of 7 ft. (H1-210.4)</p>	<p>o Min. net clear opening of 5.7 sq. ft. -Min. height dimension of opening shall be 24 inches -Min. width dimension of opening shall be 20 inches -Windows shall have max. sill height of 44 inches above floor. (801)</p>
<p>- Arrangement of means of egress</p>	<p>o Access to or egress from each dwelling unit shall be provided without passing through any other dwelling unit. (4.08)</p>	<p>o Exits from dwelling units shall not lead through other units, or through toilet rooms or bathrooms. (H1-210.1c)</p>	<p>(UBC Section 3302 stipulates that exits are not to pass through kitchens, storerooms, restrooms, closets or spaces used for similar purposes).</p>

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

<ul style="list-style-type: none"> o Min. ceiling height of 7 ft. o Stairs shall have a min. head room of 6 ft. 8 inches. (305.4) 	<p>(No specific requirement)</p>	<p>(No specific requirement)</p>	<p>(Section 405-6 of the MPS requires -</p> <ul style="list-style-type: none"> o Min. openable area of 5.7 sq. ft. o Min. height dimension of opening to be 24 inches. o Min. width dimension of opening to be 20 inches. o Windows shall have max. sill height of 44 inches above floor.)
<p>(No specific requirement)</p>	<ul style="list-style-type: none"> o All doors in the required means of egress shall be readily openable from the inner side without the use of keys. Exits from dwelling units, hotel units, lodging units, and dormitory units shall not lead through other such units, or through toilet rooms or bathrooms. (PM-701.3) 	<p>(No specific requirement)</p>	<p>(No specific requirement)</p>

MEANS OF EGRESS/EXITS (Cont.)

SUBJECT MATTER

APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.

NEW YORK STATE MODEL
HOUSING CODE,
1974

UNIFORM HOUSING CODE,
1979 EDITION (ICBO)

2. Fire escapes

(No specific requirement)

- o Fire escapes which serve as a secondary means of egress shall be of material having the properties of ferrous metal, other than cast iron, and conform to generally accepted standards. Fire escapes shall be maintained free of encumbrances
- o Access to fire escapes shall be through openable un-obstructed doors, or windows conforming to the requirements of windows for emergency exit in section H1-210 .2b
- o In buildings more than three stories in height, fire escapes shall continue to the roof, except when the slope of the roof exceeds 15 degrees
- o The lowest balcony shall be provided with a drop ladder or counter-balanced stair, if it is more than 5 feet above the ground.
(H1-210.7)

(No specific requirement)

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

(No specific requirement)

o All required fire escapes shall be maintained in working condition and structurally sound. (PM-701.4)

(No specific requirement)

(No specific requirement)

MEANS OF EGRESS/EXITS (Cont.)

SUBJECT MATTER

APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.

NEW YORK STATE MODEL
HOUSING CODE,
1974

UNIFORM HOUSING CODE,
1979 EDITION (ICBO)

3. Exit Signs/Illumination

(No specific requirement)

- o In multiple dwellings - exits, including vestibules, stairways, passageways, corridors, and hallways, but excluding fire escapes, shall be lighted with natural or electric light at all times, so as to afford safe passage. Electric light shall conform to the following:
 - 1-A sufficient number of fixtures shall be provided so that the distance between fixtures is not more than 30 feet and so that no wall is more than 15 feet from a fixture.
 - 2-Incandescent lighting - not less than 1/4 watt per square foot of floor area, except that each fixture shall have a lamp or lamps with a total of not less than 25 watts.
 - 3-Fluorescent lighting - not less than 1/10 watt per square foot of floor area, except that each fixture shall have a lamp or lamps of a total of not less than 15 watts.
 - 4-Where under these formulas the calculated wattage does not correspond to that of a standard lamp, the next larger size shall be used. (111-210.5)

(No specific requirement)

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

(No specific requirement)

o All exit signs shall be maintained illuminated and visible.(PM-701.5)

(No specific requirement)

(No specific requirement)

Appendix G
LIGHT AND ILLUMINATION

“

LIGHT AND ILLUMINATION

SUBJECT MATTER

**APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.**

**NEW YORK STATE MODEL
HOUSING CODE,
1974**

**UNIFORM HOUSING CODE,
1979 EDITION (ICBO)**

1. Natural light

- In habitable rooms

- o At least one window or skylight facing outdoors.
- o Min. window area to be at least 10 percent of floor area.
- o No light-obstructing structures closer than 3 ft. to required window. (5.01)

- o At least one window, skylight, transparent or translucent panel facing directly on open space.
- o Min. window area to be at least 10 percent of floor area.
- o Window area must be at least 6 inches above adjoining finished grade. (H1-205.3a)
- o Specific criteria for open space to permit required natural light for habitable space are given. (H1-205.4)

- o By means of exterior glazed openings.
- o Min. glazed area at least 10 percent of floor area.
- o Min. glazed area of 10 sq. ft.
- o Openings for natural light to open directly onto street, public alley, or a yard or court located on same lot as the building. (504 (a)(b))

- In kitchens/bathrooms

- o Same as habitable rooms but no window or skylight required in such rooms if they are equipped with an approved ventilation system in working condition. (5.03)

- o Natural light requirements do not apply to kitchens. (H1-205.3a)
- o Electric lighting of sufficient intensity and distribution shall be provided. (H1-207.3a)

(No specific requirement)

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

- o At least one window or skylight facing directly to the outdoors.
- o Min. window area to be at least 8 percent of floor area.
- o No light-obstructing structures closer than 3 ft. to required window.
- o For skylight-type windows required min. area is to be at least 15 percent. (303.1)

- o At least one window of approved size facing directly to the outdoors or to a court.
- o Min. total window area to be at least 8 percent of floor area.
- o No light-obstructing structures closer than 3 ft. to required window. (PM-401.2)

- o Aggregate glazing area of at least 8 percent of floor area.
- o Glazed openings to open directly onto street, or alley, or onto a yard or court located on same lot as the building. (B.4.1)

- o Natural light provided by windows, glazed doors, or skylights.
- o Min. glass area of at least 10 percent of the floor area for new or remodeled rooms. (4-3/b)
- o Where an interior room without its own source of natural light is adjacent to an outside room having natural light, consideration should be given to its acceptance as a habitable room, calculated on the basis of the combined floor area of the two rooms, where the separating wall between them has an opening either 6 ft. wide or is 70 percent as wide as the inside room. (Guides, 4-12)

- o Bathrooms shall comply with the requirements for habitable rooms except that no window or skylight shall be required in adequately ventilated bathrooms equipped with an approved ventilating system. (303.3)

- o Natural light requirement not mandatory for kitchen.
- o Artificial light for kitchen may be provided in accordance with the building code. (PM-401.2) (PM-401.2)
- o Other spaces shall be provided with natural or artificial light of sufficient intensity and so distributed to permit maintenance of sanitary conditions and safe use of space. (PM-401.4)

- o Kitchens need not be provided with natural lighting if artificial lighting is provided. (B.4.1)

- o Kitchens shall have artificial light provided. (4-3.b) (4-3.b)
- o Bathrooms and toilet compartments shall have artificial light provided. (4-3.c)

LIGHT AND ILLUMINATION (Cont.)

SUBJECT MATTER

**APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.**

**NEW YORK STATE MODEL
HOUSING CODE,
1974**

**UNIFORM HOUSING CODE,
1979 EDITION (ICBO)**

2. Artificial light

- Interior spaces

- o Every habitable room shall contain at least two separate wall type duplex electric convenience outlets or one such duplex convenience outlet and one supplied wall or ceiling type electric light fixture. No duplex outlet shall serve more than two fixtures or appliances. (5.04.02)
- o Every non-habitable room, including water closet compartments, bathrooms, laundry rooms, furnace rooms, and public halls shall contain at least one (1) supplied ceiling or wall-type electric light fixture. (5.04.04)
- o Every public hall and stairway in every multiple dwelling shall be adequately lighted by natural or artificial light at all times, so as to provide in all parts thereof at least ten (1) footcandles of light at the tread of floor level. Every public hall and stairway in structures containing not more than two (2) dwelling units may be supplied with conveniently located light switches controlling an adequate lighting system which may be turned on when needed instead of full-time lighting. (5.05)

- o Kitchenettes, bathrooms, and toilet rooms shall be provided with electric light of sufficient intensity and so distributed as to permit the maintenance of sanitary conditions, and the safe use of the space and the appliances, equipment, and fixtures. (H1-207.3a)
- o Stairs shall be provided with electric light to allow safe ascent and descent. (H1-207.3d)
- o Laundry rooms, furnace rooms, and similar non-habitable spaces shall be provided with electric light appropriate for the intended use of such rooms. (H1-207.3e)
- o Garages within or accessory to multiple dwellings shall be provided with electric light appropriate for the intended use of such spaces. (H1-207.3h)
- o In multiple dwellings - exits, including vestibules, stairways, passageways, corridors, and hallways, but excluding fire escapes, shall be lighted with natural or electric light at all times, so as to afford safe passage. Electric light shall conform to the following:
 - 1-A sufficient number of fixtures shall be provided so that the distance between fixtures is not more than 30 ft. and so that no wall is more than 15 ft. from a fixture.

- o All public hallways, stairs, and other exitways shall be adequately lighted at all times in accordance with Section 3312(a) of the Uniform Building Code. (504 (d))

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

- o Where there is electric service to the building structure, the following lighting fixtures shall be provided:

	Convenience Outlets	Light Fixtures
Habitable rooms	2	--
Bedrooms	2	1
Kitchens	3	1
Halls, bath-rooms, laundry, furnace rooms	--	1

(303.4)

- o Every common hall and inside stairway in every building, other than one-family dwellings, shall be adequately lighted at all times with an illumination of at least one (1) foot candle intensity at the floor in the darkest portion of the normally traveled stairs and passageways. (303.5)

- o Every common hall and stairway in every building, other than one-family dwellings, shall be adequately lighted at all times with an illumination of at least a sixty (60) watt light bulb. Such illumination shall be provided throughout the normally traveled stairs and passageways. (PM-401.3)
- o All other spaces shall be provided with natural or artificial light of sufficient intensity and so distributed as to permit the maintenance of sanitary conditions, and the safe use of the space and the appliances, equipment and fixtures. (PM-401.4)

- o All habitable or occupiable rooms and spaces shall be provided with artificial light by means of permanent electrical fixtures or convenience outlets. The distribution of fixtures and/or outlets shall be so as to provide satisfactory illumination throughout all rooms and spaces. (B.4.1)

- o Artificial light shall be provided and so distributed as to assure healthful conditions and satisfactory illumination in all rooms. (4-3b)
- o Artificial light shall be provided in kitchens, bathrooms and toilet compartments, and all public spaces. (4-3b,c,d)

LIGHT AND ILLUMINATION (Cont.)

SUBJECT MATTER	APHA-CDC RECOMMENDED HOUSING MAINTENANCE AND OCCUPANCY ORDINANCE, 1975 REV.	NEW YORK STATE MODEL HOUSING CODE, 1974	UNIFORM HOUSING CODE, 1979 EDITION (ICBO)
2. <u>Artificial light</u> -Interior spaces- (cont.)		<p>2-Incandescent lighting - not less than 1/4 watt per sq. ft. of floor area, except that each fixture shall have a lamp or lamps with a total of not less than 25 watts.</p> <p>3-Fluorescent lighting - not less than 1/10 watt per sq. ft. of floor area, except that each fixture shall have a lamp or lamps of a total of not less than 15 watts.</p> <p>4-Where under these formulas the calculated wattage does not correspond to that of a standard lamp, the next larger size shall be used. (H1-210.5a)</p>	
- Exterior lighting (multiple dwelling buildings)	(No specific requirement)	<p>o Exterior artificial lighting shall be provided at night to illuminate facilities used by pedestrians, including walks, driveways, parking spaces, and entranceways to buildings.</p> <p>o Exterior artificial lighting shall be of an approved type as to location and safety of installation</p> <p>o Exterior artificial lighting at or near front entranceways shall consist of at least one fixture with a lamp or lamps having a cumulative wattage of at least 50 watts, for a building with a frontage up to 25 ft. Where the frontage is in excess of 25 ft, at least two fixtures with lamps having a cumulative wattage of at least 100 watts shall be provided. (H1-211.1)</p>	(No specific requirement)

**STANDARD HOUSING CODE,
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

(No specific requirement)

(No specific requirement)

(No specific requirement)

(No specific requirement)

Appendix H
VENTILATION REQUIREMENTS

VENTILATION REQUIREMENTS

SUBJECT MATTER

**APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.**

**NEW YORK STATE MODEL
HOUSING CODE,
1974**

**UNIFORM HOUSING CODE,
1979 EDITION (ICBO)**

1. Habitable Rooms

- o Every habitable room shall have at least one (1) window or skylight facing directly outdoors which can be opened easily, or such other device as will ventilate the room adequately, provided that if connected to a room or area used seasonally then adequate ventilation must be possible through this inter-connection. The total of openable window or skylight area in every habitable room shall be equal to at least forty-five (45) percent of the minimum window area size or minimum skylight type window size, as required in subsection 5.01 of this ordinance except where there is supplied some other device affording adequate ventilation and approved by the appropriate authority. (5.02)
- o When facilities for interior climate control (heating, cooling, and/or humidity) are integral functions of structures containing dwelling units or rooming units, such facilities shall be maintained and operated in a continuous manner and in accordance with the designed capacity of the installed equipment. During instances when the integral equipment is inoperative because of power or mechanical failure, alternative provisions for fresh air ventilation of each dwelling or rooming unit shall be provided. (5.02.01)

- o Habitable space, exclusive of kitchen, shall have natural ventilation provided by means of openable parts of windows or other openings in exterior walls that face directly on open space, or through openable parts of skylights. Such openable parts shall have a total clear ventilation area equal to not less than 5 percent of the floor area of the habitable space. In computing the total clear ventilation area, only openable parts of windows or other openings, 6 inches or more above the adjoining finished grade shall be included in such calculation. (III-205.3c)
- o Habitable space may also be provided with mechanical ventilation in addition to natural ventilation but not in substitution thereof, except: kitchens may be provided with natural ventilation, conforming with paragraph c of this section, or with mechanical ventilation exhausting not less than 150 cfm. (III-205.3d)

- o All guest rooms, dormitories and habitable rooms within a dwelling unit shall be provided with natural ventilation by means of openable exterior openings with an area of not less than one-twentieth of the floor area of such rooms with a minimum of 5 square feet. (504 (a))
- o In lieu of required exterior openings for natural ventilation, a mechanical ventilation system may be provided. Such system shall be capable of providing two air changes per hour in all guest rooms, dormitories, habitable rooms and in public corridors. One-fifth of the air supply shall be taken from the outside. (504 (c))

VENTILATION REQUIREMENTS (cont.)

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

o Every habitable room shall have at least one window or skylight facing directly to the outdoors. The minimum total window area, measured between stops, for every habitable room shall be eight (8) percent of the floor area of such room. (303.1)

o Whenever the only window in a room is a skylight-type window in the top of such room, the total window area of such skylight shall equal at least fifteen (15) percent of the total floor area of such room. (303.1)

o Every habitable room shall have at least one window or skylight which can be easily opened, or such other device as will adequately ventilate the room. The total of openable window area in every habitable room shall equal to at least forty-five (45) percent of the minimum window area size or minimum skylight-type window size, as required, or shall have other approved, equivalent ventilation. (303.2a)

o Year round mechanically ventilating conditioned air systems may be substituted for windows, as required herein, in rooms other than rooms used for sleeping purposes. Window type air-conditioning units are not included in this exception. (303.26)

o All spaces or rooms shall be provided sufficient natural or mechanical ventilation so as not to endanger health and safety. Where mechanical ventilation is provided in lieu of the natural ventilation, such mechanical ventilating system shall be maintained in operation during the occupancy of any structure or portion thereof (PM-402.1)

o Every habitable room shall have at least one (1) window which can be easily opened or such other device as will adequately ventilate the room. The total openable window area in every room shall be equal to at least forty-five percent (45%) of the minimum window area size required in Section PM-401.2. (PM-402.2)

o Natural ventilation of habitable rooms: Windows, doors or other approved means of natural ventilation shall be provided for all habitable rooms or spaces. An area of ventilating opening of five (5) percent of the floor area of the room or space shall be provided, except that rooms or spaces provided with adequate mechanical ventilation as required by these guidelines need not be provided with natural ventilation.

o Mechanical ventilation of habitable rooms: Mechanical ventilation may be provided in lieu of, or may supplement, natural ventilation for habitable rooms or spaces as shown in the following Table:

MECHANICAL VENTILATION OF HABITABLE ROOMS

Function of Space	Minimum Air Changes per hour	Maximum Recirculation
Living	2	80%
Sleeping	2	80%
Cooking	3	Not permitted
Dining	2	80%

(8.4.1a)

o An acceptable means of natural ventilation shall exist or be provided for all habitable spaces, except that for kitchens a mechanical ventilation system may be substituted. A ventilation area of 5 percent of the floor area of the space shall be provided. (4-3b (3))

o Ventilation of kitchens shall be provided by either mechanical ventilation, or if by natural means - 5 percent of floor area but not less than 3 sq. ft. area. (4-3b (5))

2. Bathrooms, Non-habitable Rooms

o Every bathroom and water closet compartment, and non-habitable room used for food preparation, shall comply with the light and ventilation requirement for habitable rooms contained in subsection 5.01 and 5.02, except that no window or skylight shall be required in such rooms if they are equipped with a ventilation system in working condition, which is approved by the appropriate authority.
(5.03)

o In one- and two-family dwellings - kitchenettes, bathrooms, and toilet rooms shall be provided with ventilation in accordance with either of the following:
-Natural ventilation by openings which comply with the requirements of section H1-205.3c, except that minimum openings shall be 3 square feet for kitchenettes and 1-1/2 square feet for bathrooms and toilet rooms; or
-Mechanical ventilation exhausting not less than 150 cfm for kitchenettes, and not less than 25 cfm for bathrooms and toilet rooms.
(H1-207.3b)

o In multiple dwellings - kitchenettes, bathrooms, and toilet rooms shall be provided with ventilation in accordance with either of the following:
-Natural ventilation by openings which comply with the requirements of section H1-205.3c, except that minimum openings shall be 3 square feet for kitchenettes and bathrooms and toilet rooms designed for private use, and 1 square foot per water closet or urinal, or 3 square feet, whichever is greater, for bathrooms and toilet rooms designed for public use; or
-Mechanical ventilation exhausting not less than 150 cfm for kitchenettes, 25 cfm for bathrooms and toilet rooms designed for private use, and 40 cfm, per water closet or urinal, for bathrooms and toilet rooms designed for public use.
(H1-207.3c)

o All bathrooms, water closet compartments, laundry rooms and similar rooms shall be provided with natural ventilation by means of openable exterior openings with an area not less than one-twentieth of the floor area of such rooms with a minimum of 1-1/2 square feet.
(504 (a))

o In bathrooms, water closet compartments, laundry rooms and similar rooms a mechanical ventilation system connected directly to the outside, capable of providing five air changes per hour, shall be provided.
(504 (c))

o For the purpose of determining light and ventilation requirements, any room may be considered as a portion of an adjoining room when one-half of the area of the common wall is open and unobstructed and provides an opening of not less than one-tenth of the floor area of the interior room or 25 square feet, whichever is greater.
(504 (b))

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

o Every bathroom shall comply with the light and ventilation requirements for habitable rooms except that no window or skylight shall be required in adequately ventilated bathrooms equipped with an approved ventilating system. (303.3)

o Every bathroom and water closet compartment shall comply with the light and ventilation requirements for habitable rooms as required by Section PM-401.2 except that a window shall not be required in bathrooms or water closet compartments equipped with an approved mechanical ventilation system. (PM-402.3)

o Occupiable rooms: Occupiable rooms or spaces shall be provided with mechanical ventilation as shown in the following Table. Exception: Natural ventilation as described above may be used in lieu of mechanical ventilation

MECHANICAL VENTILATION OF OCCUPIABLE ROOMS

Room or Space	Minimum Air Changes per hour	Maximum Recirculation
Bathroom and toilet compartment	5	Not permitted
Utility Rooms	2	80%

(B.4.1b)

o Interior Room. Where an interior room without its own source of natural light and ventilation is adjacent to an outside room having both, consideration should be given to its acceptance as a habitable room, calculated on the basis of the combined floor area of the two rooms, where the separating wall between them has an opening either 6 ft. wide or is 70 percent as wide as the inside room. (Guides, 4-12a)

o Ventilation of Bathrooms in small buildings is sometimes accomplished by a gravity-type vent equipped with a wind-driven roof ventilator above the roof level. (Guides, 4-12b)

VENTILATION REQUIREMENTS (Cont.)

SUBJECT MATTER

**APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.**

**NEW YORK STATE MODEL
HOUSING CODE,
1974**

**UNIFORM HOUSING CODE,
1979 EDITION (ICBO)**

<p>3. <u>Open Space/Origin of Light and Ventilation</u></p>	<p>(No specific requirement)</p>	<ul style="list-style-type: none"> o Open space shall be of sufficient area, to permit required natural light and ventilation for habitable space. (H1-205.4a) o Windows, panels, and openings required to provide natural light or ventilation shall face directly on open space conforming to the following: <ul style="list-style-type: none"> 1-Where such open space is bounded on two sides by walls, with two open ends, and the vertical dimension of the lower wall is 30 feet or less, the horizontal dimension between walls shall be at least 8 feet. For each foot that the vertical dimension of the lower wall exceeds 30 feet, the horizontal dimension between walls, above the 30 foot level, shall be increased by at least 3 inches. Vertical dimension shall be measured from the floor level of the story containing required windows, panels, or openings to the top of the lower wall. Horizontal dimension shall be measured, at the same floor level, from the wall containing such windows, panels, or openings to the facing wall 	<ul style="list-style-type: none"> o Required exterior openings for natural light and ventilation shall open directly onto a street or public alley or a yard or court located on the same lot as the building Exception: Required windows may open into a roofed porch where the porch: <ul style="list-style-type: none"> 1-Abuts a street, yard, or court; and 2-Has a ceiling height of not less than 7 feet; and 3-Has the longer side at least 65 percent open and unobstructed A required window in a service room may open into a vent shaft which is open and unobstructed to the sky and not less than 4 feet in least dimension. No vent shaft shall extend through more than two stories. (504 (b))

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

STANDARD HOUSING CODE, 1979 EDITION (SBCCI)	BASIC PROPERTY MAINTENANCE CODE, 1978 EDITION (BOCA)	CODE ENFORCEMENT GUIDELINES FOR RESIDENTIAL REHABILITATION (BOCA)	HUD 4940.4, MINIMUM STANDARDS FOR REHABILITATION FOR RESIDENTIAL PROPERTIES, FEB. 1978
<p>o Whenever the walls or other portions of structures face a window of any such room and such light-obstruction structures are located less than three (3) feet from the window and extend to a level above that of the ceiling of the room, such a window shall not be deemed to face directly to the outdoors and shall not be included as contributing to the required minimum total window area. (303.1)</p>	<p>o An open space when used for the origin of light and ventilation shall be maintained unobstructed. (PM-400.4)</p>	<p>(No specific requirement)</p>	<p>(No specific requirement)</p>

VENTILATION REQUIREMENTS (Cont.)

SUBJECT MATTER

**APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.**

**NEW YORK STATE MODEL
HOUSING CODE,
1974**

**UNIFORM HOUSING CODE,
1979 EDITION (ICBO)**

3. Open Space/Origin of Light and Ventilation - (cont.)

2-Where such open space is bounded on three sides by walls, in addition to the requirements of subparagraph (1), the horizontal dimension from the open end of the open space to the wall opposite the open end shall not exceed 4 times the horizontal dimension between the facing walls

3-Where such open space is bounded on four sides by walls, in addition to the requirements of subparagraph (1), the horizontal dimension between any two facing walls shall not exceed 2 times the horizontal dimension between the other two facing walls.
(H1-205.46)

4. Ventilation of Other Building Space

(No specific requirement)

o Public spaces shall be provided with either natural ventilation, conforming to the requirements for habitable space, or with mechanical ventilation conforming to the requirements of table H1-512.7e. (H1-206.2c)

o Spaces in multiple dwellings which contain central heat producing equipment, incinerator, or air conditioning equipment, shall be ventilated directly to the outer air. (H1-207.3f)

o Shower rooms, locker rooms, dressing rooms, and laundry rooms shall be provided with either natural ventilation, conforming to the

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

(No specific requirement)

(No specific requirement)

o Natural ventilation of spaces such as attics, underfloor areas and crawl spaces shall be provided as required to overcome dampness and to minimize the effect of conditions conducive to decay and deterioration of the structure.
(B.4.1)

o Public Entrance Spaces. Provide either natural ventilation of at least 5 percent of floor area or mechanical ventilation. (4-3e)
o Ventilation of Utility Spaces. Utility spaces which contain heat producing, air conditioning and other equipment shall be ventilated to the outer air, and air from such spaces shall not be recirculated to other parts of the building. (4-3f)
o Ventilation of Structural Spaces. Natural ventilation of spaces such as attics and enclosed basementless spaces shall be provided by openings of sufficient sizes to overcome dampness and minimize the effect of

VENTILATION REQUIREMENTS (Cont.)

SUBJECT MATTER

APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.

NEW YORK STATE MODEL
HOUSING CODE,
1974

UNIFORM HOUSING CODE,
1979 EDITION (ICBO)

4. Ventilation of Other Building
Space - (cont.)

requirements for habitable space,
or with mechanical ventilation con-
forming to the requirements of
table HI-512.7e. (HI-207.3g)

o Garage areas above grade, in ex-
cess of 1000 square feet, and all
garage areas below grade shall be
provided with mechanical ventila-
tion, in conformity with table
HI-512.7e. (HI-207.31)

o In multiple dwellings - stairways,
passageways, corridors, and hall-
ways shall be provided with ven-
tilation in accordance with either
of the following:

-Natural ventilation obtained by
means of openings to the outer
air, or by means of ducts con-
nected to wind or gravity oper-
ated ventilators; or

-Mechanical ventilation conforming
to the requirements of table
HI-512.7e. (HI-210.5b)

(Table HI-512.7e follows on
next page)

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

conditions conducive to decay and deterioration of the structure, and to prevent excessive heat in attics. Exterior ventilation openings shall be effectively screened where needed.

(4-3g)

- o Public Hallways and Unenclosed Stairways should be provided with either natural ventilation (at least 5 percent of floor area) or mechanical ventilation. Enclosed public corridors should be ventilated mechanically. (Guides, 4-12c)

VENTILATION REQUIREMENTS (Cont.)

SUBJECT MATTER

APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.

NEW YORK STATE MODEL
HOUSING CODE,
1974

UNIFORM HOUSING CODE,
1979 EDITION (ICBO)

4. Ventilation of Other Building Space - (cont.)

Table III-512.7e MECHANICAL VENTILATION REQUIREMENTS	
Space	Minimum Ventilation
Shower rooms, locker rooms, dressing rooms	6 air changes per hour
Recreation rooms	2 air changes per hour
Lounges, reception rooms, dining rooms, meeting rooms	4 air changes per hour
Workshops, service rooms, paint storage rooms, utility service rooms	1 air change per hour
Laundry rooms	2 air changes per hour
Central kitchens	4 air changes per hour
Central dining rooms	4 air changes per hour
Garage areas: above grade exceeding 1000 sq. ft.	4 air changes per hour
below grade	6 air changes per hour
Passageways, hallways, corridors and stairways: above grade	1/2 air change per hour
below grade	1 air change per hour

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

VENTILATION REQUIREMENTS (Cont.)

**APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.**

**NEW YORK STATE MODEL
HOUSING CODE,
1974**

**UNIFORM HOUSING CODE,
1979 EDITION (ICBO)**

SUBJECT MATTER	APHA-CDC RECOMMENDED HOUSING MAINTENANCE AND OCCUPANCY ORDINANCE, 1975 REV.	NEW YORK STATE MODEL HOUSING CODE, 1974	UNIFORM HOUSING CODE, 1979 EDITION (ICBO)
<p>5. <u>Other Ventilation Requirements/ Restrictions</u></p>	<p>(No specific requirement)</p>	<ul style="list-style-type: none"> o Ventilating systems shall be installed and maintained so that the rapid spread of heat, flame, or smoke through the system will be prevented o Shafts, other than those designed for ventilating purposes, stairways, passageways, exits, hoistways, or attics shall not be used as plenum chambers o Ducts shall be securely fastened in place and appropriately fire-stopped o Ducts and other air handling equipment shall be of noncombustible material o Filters shall be installed and maintained so as not to constitute a fire or smoke hazard o Ducts passing through or located within combustible construction shall be separated from such construction by a clearance of at least 1/2 inch or by a noncombustible insulating material at least 1/4 inch thick o Ducts passing through fire walls shall be equipped with a fire damper or shutter on each side of the fire wall. Ducts passing through other fire separations shall be equipped with a single fire damper or shutter o Air required for ventilation shall be taken from the exterior or shall be quality-controlled, including an amount of exterior air equal to not less than one air change per hour. 	<p>(No specific requirement)</p>

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

(No specific requirement)

- o Cooking shall not be permitted in any sleeping room or dormitory unit, and a cooking facility or appliance shall not be permitted to be present in a sleeping room or dormitory unit. (PM-402.4)
- o Where any process permits and where injurious, toxic, irritating or noxious fumes, gases, dusts, or mists are generated by said process, a local exhaust ventilation shall be provided to remove the contaminating agent at the source so that it is not allowed to permeate the general atmosphere of the workroom. (PM-402.5)

(No specific requirement)

- o Mechanical Ventilation and Air Conditioning. Where mechanical ventilation is required in rooms or other spaces, the equipment or system shall operate satisfactorily if presently in place, or if new, shall be designed and installed to good engineering practice. (9-3)
- o Exhaust Air should not be circulated from one living unit to another, except where the air circulation system is already installed and where it is considered this system will cause no adverse effect on the marketability of the property.
- o The Volume of Air removed from a living unit by exhaust ventilation should be replaced by at least an equal amount of fresh air which is filtered and tempered.
- o When Mechanical Ventilation is Provided in lieu of through or cross ventilation, 4 to 6 changes per hour of supply or exhaust air should be provided for the living unit.
- o In Walk-Up Multifamily Buildings, tenant-operated ventilating fans should be installed only when they exhaust directly to the outdoors. When a central exhaust system is used, the occupant should not be provided with a means for disturbing the air flow.
- o Installation. The installation of a ventilating system should be in compliance with NFPA No. 90A for multifamily or NFPA No. 90B for

VENTILATION REQUIREMENTS (Cont.)

SUBJECT MATTER	APHA-CDC RECOMMENDED HOUSING MAINTENANCE AND OCCUPANCY ORDINANCE, 1975 REV.	NEW YORK STATE MODEL HOUSING CODE, 1974	UNIFORM HOUSING CODE, 1979 EDITION (ICBO)
----------------	--	---	--

5. Other Ventilation Requirements/
Restrictions - (cont.)

o Exhaust air from a dwelling unit, or a space whose contents may emit odors, fumes, or vapors, shall not be circulated to another dwelling unit or to other spaces within the building. (11-512.5)

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

single family dwellings
o Where Summer Air Conditioning is to be included, whether a central system or packaged room or zonal air conditioners, the provisions of Sections 515-A and 615-A, of the Minimum Property Standards should be followed. (Guides, 9-10)

Appendix I
MECHANICAL REQUIREMENTS

MECHANICAL REQUIREMENTS

SUBJECT MATTER

**APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.**

**NEW YORK STATE MODEL
HOUSING CODE,
1974**

**UNIFORM HOUSING CODE,
1979 EDITION (ICBO)**

<p>1. <u>Heating and Cooking Facilities</u> - Minimum thermal requirements to be maintained</p>	<p>o At least 68° F at a distance 36 in. above floor level under ordinary winter conditions in all habitable rooms, bathrooms and water closet compartments. (6.01)</p>	<p>o An indoor temperature of 70°F., measured at a distance of 3 feet and more from exterior walls, and at a level of 5 feet above the floor. (Specific heating periods by county are given based on annual heating degree days). Temperatures to be maintained in habitable spaces, kitchenettes, toilet rooms, and bathrooms as follows: 1-From 6:00 a.m. to 11:00 p.m., not less than 70°F. when the outside temperature falls below 55°F 2-From 11:00 p.m. to 6:00 a.m., not less than 55° F when the outside temperature falls below 40°F. (H1-506.1)</p>	<p>o Every dwelling unit and guest room shall be provided with heating facilities capable of maintaining a room temperature of 70°F at a point 3 feet above the floor in all habitable rooms. (701 (a))</p>
<p>- Installation and clearances</p>	<p>o Every dwelling shall have heating equipment and appurtenances which are properly installed, and are maintained in safe and good working condition. (6.01) o All heating devices shall be constructed, installed, and operated in such a manner as to minimize accidental burns. (6.02)</p>	<p>o Where heat producing or cooking equipment is installed on, or adjacent to, combustible materials, the location, insulation, clearance, and the control of the equipment shall be such that the temperature on the surface of the combustible materials will not exceed 175°F. (H1-506.6) o Fuel-burning equipment shall be permanently fastened and connected in place. Fuel supply connection to such equipment shall be made with pipe or tubing of solid metal, or approved appliance connector. (H1-506.5) o Buildings intended for residential occupancy shall be provided with heating equipment, of an approved fixed type. (H1-506.1)</p>	<p>o Facilities shall be installed and maintained in a safe condition and in accordance with Chapter 37 of the Building Code, the Mechanical Code and all other applicable laws o All heating devices or appliances shall be of an approved type. (701 (a))</p>

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

o Heating facilities for adequately heating all habitable rooms, and bathrooms in every dwelling unit to a temperature of at least 70°F at a distance 3 feet above floor level, under ordinary winter conditions. (302.5)

o Facilities capable of maintaining a room temperature of 65°F at a point 3 feet above the floor and 3 feet from an exterior wall in all habitable rooms, bathrooms and toilet rooms. (PM-601.1)

o Assure interior comfort by providing a minimum inside temperature as required by the applicable code or ordinance. (B.8.3)

o Capable of maintaining a temperature of at least 70°F within the living units, corridors, public spaces and utility spaces when the outside temperature is at the design temperature
o In housing for elderly, inside design temperature shall be not less than 75°F. (9-4b)

o All cooking and heating equipment and facilities shall be installed in accordance with the building, mechanical, gas or electrical code and shall be maintained in a safe and good working condition. (302.6)

o All cooking and heating equipment, components, and accessories in every heating, cooking, and water heating device shall be maintained free from leaks and obstructions, and kept functioning properly so as to be free from fire, health, and accident hazards. All installations and repairs shall be made in accordance with the provisions of the building code, or other laws or ordinances applicable thereto. (PM-601.3)
o All required clearances to combustible materials shall be maintained. (PM-601.4.2)

o Heating facilities which are properly installed, connected and maintained shall be provided for each dwelling unit and for the common spaces and utility spaces of the building.
o Existing non-conforming system components or devices may, with the approval of the administrative authority, continue in use if there is evidence of satisfactory performance, safety and adequate capacity.
o New heating equipment and systems shall be designed and installed in accordance with the requirements of the heating code or other applicable code or ordinance.

o Heating Facilities shall be provided for each living unit and other spaces that will:
1-Assure interior comfort;
2-Be safe and convenient to operate,
3-Be economical in performance, and
4-Be quiet in operation and free from objectionable drafts. (9-4a)
o Appropriate Clearances around all room or space heaters shall be provided, and the floor shall be protected in an acceptable manner. (For gas - NFPA Standard No. 54, 54A; for oil - NFPA Standard No. 31-65.) (9-4e)

MECHANICAL REQUIREMENTS (Cont.)

SUBJECT MATTER

APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.

NEW YORK STATE MODEL
HOUSING CODE,
1974

UNIFORM HOUSING CODE,
1979 EDITION (ICBO)

1. Heating and Cooking Facilities (cont.)
- Installation and clearances (cont.)

- Prohibited equipment/fuels

o No owner or occupant shall install, operate or use a heating device, including hot water heating units, which employs the combustion of carbonaceous fuel, which is not vented to the outside of the structure in an approved manner, and which is not supplied with sufficient air to continuously support the combustion of the fuel. (6.02)

o Portable heating equipment using kerosene or other flammable liquids shall be prohibited.
o Unvented fuel-burning space heaters shall be prohibited.
o Fuel-burning heat producing equipment shall not be located in exits
o Fuel-burning water heaters shall not be located in sleeping rooms, bathrooms, or toilet rooms. (H1-506.4)
o Gasoline shall be prohibited as fuel for heating and cooking. (H1-505)

o Unvented fuel-burning heaters shall not be permitted. (701 (a))

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

		<ul style="list-style-type: none"> o Space heaters shall conform to the requirements of the building code, heating code or other applicable code or ordinance for new installations. o Portions of heating systems not specifically mentioned in this section shall be deemed to meet the intent and requirements of this code if constructed and installed in accordance with the applicable code and ordinance. (B.8.3) 	
<ul style="list-style-type: none"> o Unvented fuel-burning heaters shall be prohibited. (302.5) o Portable cooking equipment employing flame is prohibited. (302.6) 	<ul style="list-style-type: none"> o Portable cooking equipment employing flame is prohibited, except for approved residential type food trays or salvers which are heated by a candle or alcohol lamp. (PM-601.3) 	<p>(No specific requirement)</p>	<ul style="list-style-type: none"> o No Open-Flame Radiant Type Space Heaters shall be permitted, except for one and two family detached dwellings only where it is locally determined to be the predominant method of providing heat for dwellings. (9-4c) o Unvented Space Heaters shall not be permitted except for existing equipment in geographic areas where the use of equipment of this kind is predominant, and only for one and two family detached dwellings. (9-4d)

MECHANICAL REQUIREMENTS (Cont.)

SUBJECT MATTER

APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.

NEW YORK STATE MODEL
HOUSING CODE,
1974

UNIFORM HOUSING CODE,
1979 EDITION (ICBO)

1. Heating and Cooking Facilities (cont)
- Safety controls

(No specific requirement)

- o Equipment capable of developing hazardous pressures or temperatures shall be provided with devices to relieve safely such pressures and temperatures.
- o Controls for the safe operation of automatically operated heat producing equipment shall be provided to function as follows:
 - When failure or interruption of flame or ignition occurs, the fuel supply shall be cut off.
 - When a predetermined temperature or pressure is exceeded, the input of additional heat shall be prevented or reduced to a safe rate.
 - When the water level in a steam boiler drops below a predetermined level, the fuel supply shall be cut off.
 - When failure or interruption of pilot light or main burner of liquified petroleum gas equipment occurs, the fuel supply to each pilot light and main burner shall be cut off.
- o Fuel-burning space heaters located in bathrooms or toilet rooms less than 100 square feet in area, or in sleeping rooms, shall be provided with controls to cut off the fuel supply upon the failure or interruption of the flame or ignition, or whenever a predetermined temperature or pressure is exceeded. (H1-506.9)

(No specific requirement)

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

(No specific requirement)

o All safety controls for fuel-burning
equipment shall be maintained in ef-
fective operation. (PM-601.4.3)

(No specific requirement)

(No specific requirement)

MECHANICAL REQUIREMENTS (Cont.)

SUBJECT MATTER

**APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.**

**NEW YORK STATE MODEL
HOUSING CODE,
1974**

**UNIFORM HOUSING CODE,
1979 EDITION (ICBO)**

<p>1. <u>Heating and Cooking Facilities</u> (cont) - Combustion air supply</p>	<p>(No specific requirement)</p>	<ul style="list-style-type: none"> o Fuel-burning heating equipment and the enclosure in which it is located shall be provided with a supply of air adequate both, for complete combustion at the rated gross output of the equipment, and for the ventilation of the enclosure. o Rooms containing fuel-burning equipment shall have such air supply provided by one or more openings to the exterior, or by fixed openings to interior spaces which open to the exterior. (H1-506.7) 	<ul style="list-style-type: none"> o Ventilation for rooms and areas for fuel-burning appliances shall be provided as required in the Mechanical Code and in this code. (701 (c))
<p>- Removal of products of combustion</p>	<p>(No specific requirement)</p>	<ul style="list-style-type: none"> o Equipment for burning solid or liquid fuel shall be connected to suitable chimneys or flues, and shall not be connected to gasvents o Gas-fired equipment shall be connected to a suitable chimney, flue, or gasvent. Where a gasvent is used, a permanent sign stating the type of heating equipment which may be connected to the gasvent shall be provided, and located where the gasvent passes through the wall or ceiling. (H1-506.8) 	<p>(No specific requirement)</p>

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

STANDARD HOUSING CODE, 1979 EDITION (SBCCI)	BASIC PROPERTY MAINTENANCE CODE, 1978 EDITION (BOCA)	CODE ENFORCEMENT GUIDELINES FOR RESIDENTIAL REHABILITATION (BOCA)	HUD 4940.4, MINIMUM STANDARDS FOR REHABILITATION FOR RESIDENTIAL PROPERTIES, FEB. 1978
(No specific requirement)	<p>o A supply of air for complete combustion of the fuel and for ventilation of the space shall be provided the fuel-burning equipment. (PM-601.4.4)</p>	(No specific requirement)	(No specific requirement)
(No specific requirement)	<p>o All fuel-burning equipment shall be connected to an approved chimney, flue or vent. (PM-601.4.1)</p>	(No specific Requirement)	(No specific requirement)

MECHANICAL REQUIREMENTS (Cont.)

SUBJECT MATTER

APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.

NEW YORK STATE MODEL
HOUSING CODE,
1974

UNIFORM HOUSING CODE,
1979 EDITION (ICBO)

2. Mechanical Ventilation/Climate Control

o When facilities for interior climate control (heating, cooling, and/or humidity) are integral functions of structures containing dwelling units or rooming units, such facilities shall be maintained and operated in a continuous manner and in accordance with the designed capacity of the installed equipment. During instances when the integral equipment is inoperative because of power or mechanical failure, alternative provisions for fresh air ventilation of each dwelling or rooming unit shall be provided. (5.02.01)

Contains Extensive Provisions

- H1-511 Air Conditioning and Mechanical Ventilation in One- and Two-Family Dwellings
- H1-512 Air Conditioning and Mechanical Ventilation in Multiple Dwellings
 - H1-512.1 Refrigeration
 - H1-512.2 Refrigerants
 - H1-512.3 Safety Controls
 - H1-512.4 Cooling Towers
 - H1-512.5 Mechanical Ventilating Systems
 - H1-512.6 Air Intake and Exhaust Openings
 - H1-512.7 Ventilation Requirements
 - H1-512.8 Safety Controls

o Ventilation for rooms and areas and for fuel-burning appliances shall be provided as required in the Mechanical Code and in this code. Where mechanical ventilation is provided in lieu of the natural ventilation required by Section 504 of this code, such mechanical ventilating system shall be maintained in operation during the occupancy of any building or portion thereof (701 (c))

o In lieu of required exterior openings for natural ventilation, a mechanical ventilation system may be provided. Such system shall be capable of providing two air changes per hour in all guest rooms, dormitories, habitable rooms and in public corridors. One-fifth of the air supply shall be taken from the outside. In bathrooms, water closet compartments, laundry rooms and similar rooms a mechanical ventilation system connected directly to the outside, capable of providing five air changes per hour, shall be provided. (504 (c))

STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)

BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)

CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)

HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978

o Year round mechanically ventilating conditioned air systems may be substituted for windows, as required herein, in rooms other than rooms used for sleeping purposes. Window type air-conditioning units are not included in this exception.
(303.2 (b))

o When facilities for interior climate control (heating, cooling, and/or humidity) are integral functions of structures used as dwelling units or other occupancies, such facilities shall be maintained and operated in a continuous manner in accordance with the designed capacity.
(PM-601.6)

o Existing systems of mechanical ventilation may continue in use if of adequate capacity, or they may be supplemented or replaced with a new system if of inadequate capacity
o New mechanical ventilation and air-conditioning equipment and systems shall be designed and installed in accordance with the requirements of the mechanical code or other applicable code or ordinance.
(B.8.4)

o Where mechanical ventilation is required in rooms or other spaces, the equipment or system shall operate satisfactorily if presently in place, or if new, shall be designed and installed to good engineering practice. (9-3)
o Exhaust Air should not be circulated from one living unit to another, except where the air circulation system is already installed, and where it is considered this system will cause no adverse effect on the marketability of the property.
o The Volume of Air removed from a living unit by exhaust ventilation should be replaced by at least an equal amount of fresh air which is filtered and tempered.
o When Mechanical Ventilation is Provided in lieu of through or cross ventilation, 4 to 6 changes per hour of supply or exhaust air should be provided for the living unit.
o In Walk-Up Multifamily Buildings, tenant-operated ventilating fans should be installed only when they exhaust directly to the outdoors. When a central exhaust system is used, the occupant should not be provided with a means for disturbing the air flow.
o Installation. The installation of a ventilating system should be in compliance with NFPA No. 90A for

MECHANICAL REQUIREMENTS (Cont.)

SUBJECT MATTER

APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.

NEW YORK STATE MODEL
HOUSING CODE,
1974

UNIFORM HOUSING CODE,
1979 EDITION (ICBO)

2. Mechanical Ventilation/Climate
Control - (cont.)

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

multifamily or NFPA No. 90B for
single family dwellings.
o Where Summer Air Conditioning is to
be Included, whether a central sys-
tem or packaged room or zonal air
conditioners, the provisions of
Sections 515-4 and 615-4, 4900.1 -
Minimum Property Standards, should
be followed. (Guides, 9-10)

Faint header text, possibly containing a title or date, which is illegible due to blurring.

Column 1	Column 2	Column 3

Appendix J
ELECTRICAL REQUIREMENTS

ELECTRICAL REQUIREMENTS

SUBJECT MATTER

**APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.**

**NEW YORK STATE MODEL
HOUSING CODE,
1974**

**UNIFORM HOUSING CODE,
1979 EDITION (ICBO)**

<p>1. <u>Availability of Electrical Service</u></p>	<p>o Where there is usable electric service available from power lines which are not more than three hundred (300) feet away from a dwelling, every dwelling unit and all public and common areas shall be supplied with electric service. (5.04)</p>	<p>o Electrical system shall be properly installed, connected to an approved source of supply, and maintained free of hazards. (H1-509.1a)</p>	<p>o Where there is electrical power available within 300 feet of the premises of any building, such building shall be connected to such electrical power.(701 (b))</p>
<p>2. <u>Service Supply Capacity</u></p>	<p>o Every dwelling unit shall be supplied with at least one (1) 15 ampere circuit and such circuit shall not be shared with another dwelling unit. (5.04.01)</p>	<p>o A dwelling unit shall be supplied with at least one 15-ampere lighting branch circuit for each multiple of 400 sq. ft. of floor area, or fraction thereof. (H1-509.2a)</p> <p>o Hotel units, lodging units, and dormitory units shall be supplied with at least one 15-ampere lighting branch circuit for each multiple of 600 sq. ft. of cumulative floor area, or fraction thereof. (H1-509.2b)</p>	<p>(No specific requirement)</p>

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

<p>o Where there is electric service available to the building structure... (303.4)</p>	<p>o Where there is electric service available to a structure... (PM-602.1)</p>	<p>o All habitable or occupiable rooms and spaces shall be provided with artificial light by means of permanent electrical fixtures or convenience outlets. (B.4.1)</p>	<p>o All habitable rooms and other appropriate spaces requiring electrical service shall be provided with a system of wiring, wiring devices and equipment to safely supply electrical energy for proper illumination, appliances, resident security, and other electrical equipment. (9-7a)</p>
<p>(No specific requirement)</p>	<p>(No specific requirement)</p>	<p>o Habitable rooms, occupiable rooms utility spaces and common spaces normally requiring electrical service shall be provided with a system of wiring, wiring devices, fixtures and equipment to safely supply electrical energy for proper illumination, appliances and other electrical equipment. (B.8.2)</p>	<p>o For new electrical work the appropriate provisions of the National Electrical Code shall be used as a guide for design layout and installation. Not less than two general lighting circuits (15 amp.) and one appliance circuit (20 amp.) shall be provided for each living unit. Heavy duty equipment shall have individual branch circuits, as required by the National Electrical Code. (9-7c)</p>

ELECTRICAL REQUIREMENTS (Cont.)

SUBJECT MATTER

APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.

NEW YORK STATE MODEL
HOUSING CODE,
1974

UNIFORM HOUSING CODE,
1979 EDITION (ICBO)

3. Installation

- o Every dwelling unit and all public and common areas shall be supplied with electric service, outlets, and fixtures which shall be properly installed, shall be maintained in good and safe working condition, and shall be connected to a source of electric power in a manner prescribed by the ordinances, rules and regulations of the (name of Corporate Unit). (5.04)
- o Temporary wiring or extension cords shall not be used as permanent wiring. (5.04.03)
- o All electric lights and outlets in bathrooms shall be controlled by switches which are of such design as shall minimize the danger of electric shock, and such lights and outlets shall be installed and maintained in such condition as to minimize the danger of electrical shock. (5.04.05)

- o Electrical system shall be properly installed, connected to an approved source of supply, and maintained free of hazards.
- o Electrical wiring and equipment shall be firmly secured to the surface on which it is mounted.
- o Electrical wiring and equipment in damp or wet locations, or exposed to explosive or flammable gases, or excessive temperatures, shall be of an approved type for the purpose and location.
- o Electrical wiring and equipment shall be protected against excessive current by approved, properly rated overcurrent protection devices. Overcurrent protection devices, of ratings higher than the ampacities of the conductors to be protected, shall not be used, except where expressly permitted by generally accepted standards. Where a circuit has been overfused, the Edison-base plug fuse shall be replaced with a Type S plug fuse, of the proper rating, with a suitable fuse adapter.
- o Electrical service equipment and overcurrent protection devices shall be installed in a readily accessible location, and access to such location shall be kept unobstructed.
- o Electrical equipment shall be grounded, or otherwise protected by insulation, isolation, or guarding.

- o All electrical equipment, wiring and appliances shall be installed and maintained in a safe manner in accordance with all applicable laws. All electrical equipment shall be of an approved type. (701 (b))

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

o Every electrical outlet and fixture required by this code shall be installed, maintained and connected to a source of electric power in accordance with the provisions of the electrical code of the authority having jurisdiction.
(304)

o All electrical equipment, wiring, and appliances shall be installed and maintained in a safe manner in accordance with all applicable laws. All electrical equipment shall be of an approved type. (PM-602.2)

o The electrical system shall be connected to the source of electrical power insofar as is practical, in accordance with the electrical code.
o New electrical systems, equipment, fittings and devices shall be installed in accordance with the electrical code.
o The electrical system, equipment and facilities in dwelling units shall conform to the requirements of the applicable code or ordinance. (B.8.2)

o For new electrical work the appropriate provisions of the National Electrical Code shall be used as a guide for design layout and installation. (9-7c)

ELECTRICAL REQUIREMENTS (Cont.)

SUBJECT MATTER	APHA-CDC RECOMMENDED HOUSING MAINTENANCE AND OCCUPANCY ORDINANCE, 1975 REV.	NEW YORK STATE MODEL HOUSING CODE, 1974	UNIFORM HOUSING CODE, 1979 EDITION (ICBO)
3. <u>Installation</u> (cont.)		<ul style="list-style-type: none"> o Parts of electrical equipment, which in ordinary operation produce arcs or sparks, shall be enclosed, unless separated and isolated from combustible material. o Flexible cord shall not be: run through holes in walls, ceilings, or floors; or run through doorways, windows, or similar openings; or attached to building surfaces; or concealed behind building walls, or above ceilings, or under floors or floor coverings. <p style="text-align: right;">(111-509.1)</p>	

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

ELECTRICAL REQUIREMENTS (Cont.)

APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.

NEW YORK STATE MODEL
HOUSING CODE,
1974

UNIFORM HOUSING CODE,
1979 EDITION (ICBO)

SUBJECT MATTER

4. Existing Systems, Equipment and
Wiring

(No specific requirement)

(No specific requirement)

(No specific requirement)

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

(No specific requirement)

o Where it is found, in the opinion of the code official, that the electrical system in a structure constitutes a hazard to the occupants or the structure by reason of inadequate service, improper fusing, insufficient outlets, improper wiring or installation, deterioration or damage, or for similar reasons, he shall require the defects to be corrected to eliminate the hazard. (PM-602.3)

o Existing electrical, heating, mechanical, ventilation and air-conditioning, and plumbing equipment and systems that do not provide the services for which they were originally intended, or that are potential fire or health hazards, shall be replaced, altered or repaired, so as to make them safe and serviceable. (B.8.1)

o Existing wiring which conformed to applicable laws in effect at the time of installation and which has been maintained in good condition, which is not being altered or extended, and is being used in a safe manner, may continue in use. Existing electrical systems which are of inadequate capacity shall be replaced with a new system or shall be supplemented with new wiring and equipment as necessary to meet the requirements of these guidelines. (B.8.2)

o Existing wiring and electrical equipment where its continued service is contemplated shall not be a potential source of electrical hazard or ignition of combustible materials, and shall be so determined by the proper authority. Wherever these potential hazards are determined to be present, replacement of existing wiring and equipment shall be made. Existing facilities that are inadequate to meet anticipated demands shall be appropriately increased. (9-7b)

ELECTRICAL REQUIREMENTS (Cont.)

SUBJECT MATTER

APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.

NEW YORK STATE MODEL
HOUSING CODE,
1974

UNIFORM HOUSING CODE,
1979 EDITION (ICBO)

5. Minimum Electrical Outlets/Lighting
Fixtures

- o Every habitable room shall contain at least two separate wall type duplex electric convenience outlets or one such duplex convenience outlet and one supplied wall or ceiling type electric light fixture. No duplex outlet shall serve more than two fixtures or appliances. (5.04.02)
- o Every non-habitable room, including water closet compartments, bathrooms, laundry rooms, furnace rooms, and public halls shall contain at least one (1) supplied ceiling or wall-type electric light fixture. (5.04.04)

- o Habitable spaces, except kitchens, shall be provided with at least one receptacle outlet for each multiple, of 20 feet, or fraction thereof, or the total distance around the room, measured horizontally along the wall at the floor line. An electric light outlet and fixture may be substituted for only one receptable outlet.
- o Kitchens and kitchenettes shall be provided with at least two receptacle outlets served by at least one 15-ampere small appliance branch circuit. In addition, one electric light outlet and fixture shall be provided.
- o Bathrooms, toilet rooms, and laundry rooms shall be provided with at least one electric light outlet and fixture, and one receptacle outlet. Furnace rooms, storage rooms, work shops, and similar service rooms shall be provided with at least one electric light outlet and fixture.
- o Light switches or other devices, for controlling lights which illuminate entrances, shall be provided at points of entrance to dwelling units, hotel units, lodging units, and dormitory units (H1-509.2)

- o Every habitable room shall contain at least two supplied electric convenience outlets or one such convenience outlet and one supplied electric light fixture. Every water closet compartment, bathroom, laundry room, furnace room and public hallway shall contain at least one supplied electric light fixture. (701 (b))

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

o Every habitable room or space shall contain at least two (2) separate and remote convenience outlets and bedrooms shall have, in addition, at least one (1) wall switch controlled ceiling or wall type light fixture. In kitchens, three (3) separate and remote convenience outlets shall be provided, and a wall or ceiling type light fixture controlled by a wall switch shall be required. Every hall, water closet compartment, bathroom, laundry room or furnace room shall contain at least one (1) electric fixture. In bathrooms the electric light fixture shall be controlled by a wall switch. In addition to the electric light fixture in every bathroom and laundry room, there shall be provided at least one (1) convenience outlet. (303.4)

o Every habitable room of a dwelling unit, and every guest room, shall contain at least two (2) separate and remote outlets, one (1) of which may be a ceiling or wall type electric light fixture. In a kitchen, three (3) separate and remote wall type electric convenience outlets or two (2) such convenience outlets and one (1) ceiling or wall type electric light fixture shall be provided. Every public hall, water closet compartment, bathroom, laundry room or furnace room shall contain at least one (1) electric light fixture. In addition to the electric light fixture in every bathroom and laundry room, there shall be provided at least one (1) electric outlet. (PM-602.1)

o The distribution of fixtures and/or outlets shall be so as to provide satisfactory illumination throughout all rooms and spaces. (B.4.1)

o All habitable rooms and other appropriate spaces requiring electrical service shall be provided with a system of wiring, wiring devices and equipment to safely supply electrical energy for proper illumination, appliances, resident security, and other electrical equipment. (9-7a)

ELECTRICAL REQUIREMENTS (Cont.)

SUBJECT MATTER

APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.

NEW YORK STATE MODEL
HOUSING CODE,
1974

UNIFORM HOUSING CODE,
1979 EDITION (ICBO)

<p>6. <u>Emergency Lighting - Exits, Public Space, Stairways in Multiple Dwellings</u></p>	<p>(No specific requirement)</p>	<ul style="list-style-type: none"> o Exits in multiple dwellings shall be provided with exit and directional signs, visible from the approach to the exits, except that such signs shall not be required in an apartment house, or in those portions of a multiple dwelling where exit from dwelling units, hotel units, lodging units, or dormitory units is directly to the outside. o Directional signs shall be provided at locations from which the exit doorway is not readily discernible. o Signs shall be worded in plainly legible block letters with the word EXIT for exit signs and the words TO EXIT with a suitable pointer or arrow indicating the direction of exit, for directional signs. o Any door, passageway, stair, or other means of communication that is not an exit, or that is not a way to an exit, but is so located as to be mistaken for an exit, shall be identified with a sign reading NOT AN EXIT, or identified by a sign indicating its use or purpose, or provided with a directional sign. o Letters for signs shall be conspicuous, readily discernible, and at least 8 inches high, except that for internally illuminated signs the height of such letters shall be at least 4 1/2 inches. 	<p>(No specific requirement)</p>
--	----------------------------------	---	----------------------------------

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

o Every common hall and inside stairway in every building, other than one-family dwellings, shall be adequately lighted at all times with an illumination of at least one (1) foot candle intensity at the floor in the darkest portion of the normally traveled stairs and passageway.
(303.5)

(No specific requirement)

(No specific requirement)

o Emergency lighting shall be provided for exits, stairs, corridors and elevators which shall be supplied by an alternate separate service, an automatic emergency generator or battery with automatic switch. (9-7f)

ELECTRICAL REQUIREMENTS (Cont.)

APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.

NEW YORK STATE MODEL
HOUSING CODE,
1974

UNIFORM HOUSING CODE,
1979 EDITION (ICBO)

SUBJECT MATTER

<p>6. <u>Emergency Lighting - Exits, Public Space, Stairways in Multiple Dwellings</u></p>		<p>o Signs shall be illuminated either externally or internally be electric lights, and be kept illuminated at all times when the building is occupied. Such electric lights shall be supplied with current from a separate circuit, or circuits which supply no other outlets. (H1-509.3)</p>	
<p>7. <u>Communication and Alarm Systems in Multiple Dwellings</u></p>	<p>(No specific requirement)</p>	<p>(No specific requirement)</p>	<p>(No specific requirement)</p>
<p>8. <u>Special Requirements in Housing for the Elderly or Handicapped</u></p>	<p>(No specific requirement)</p>	<p>(No specific requirement)</p>	<p>(No specific requirement)</p>

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

			<p>o In multifamily projects, where considered by local authorities to be clearly needed, adequate security measures for the protection of residents against crime shall be provided. (9-7g)</p>
			<p>o In housing for elderly a duplex outlet to receive a night light shall be provided between a bed location and the bathroom in each living unit. (9-7g)</p> <p>o In projects containing 20 or more living units, each bathroom and one bed location in each bedroom shall be furnished with one of the following emergency call systems: an emergency call system which registers a call (annunciator and alarm) at one or more central supervised locations, an intercommunicating telephone system connected to a switchboard which is monitored 24 hours a day, an emergency call system which sounds alarm (not fire alarm) in the immediate corridor and automatically actuates a visual signal</p>

ELECTRICAL REQUIREMENTS (Cont.)

SUBJECT MATTER

APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.

NEW YORK STATE MODEL
HOUSING CODE,
1974

UNIFORM HOUSING CODE,
1979 EDITION (ICBO)

8. Special Requirements in Housing
for the Elderly or Handicapped
(cont.)

9. Overhead Conductors

o Overhead electrical conductors, rated 600 volts or less, shall clear on-premises areas as follows:

<u>Location</u>	<u>Clearance</u>
Above streets, drive-ways, parking spaces, and other use areas where motor vehicles are permitted	18 feet
Above areas accessible to pedestrians only	10 feet
Above buildings and structures	8 feet
Horizontal clearance from any window, door, porch, balcony, or other similar point of access	6 feet
Horizontal clearance from the periphery of any swimming pool	15 feet

o Metal fences, enclosures, or railings which enclose a swimming pool, and which could become energized through accidental contact with overhead electrical conductors, shall be properly grounded. (H1-509.4)

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

(No specific requirement)	(No specific requirement)	(No specific requirement)	in the corridor at the living unit entrance and unlocks the living unit door. (9-7e) (No specific requirement)



Appendix K
PLUMBING REQUIREMENTS

PLUMBING REQUIREMENTS

SUBJECT MATTER

**APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.**

**NEW YORK STATE MODEL
HOUSING CODE,
1974**

**UNIFORM HOUSING CODE,
1979 EDITION (ICBO)**

1. Water Supply and Distribution

o Kitchen sink, lavatory sink, flush water closet, and a bathtub or shower properly connected to a water supply system which is approved by the appropriate authority and which provides at all times an adequate amount of heated and unheated running water under pressure.
(4.01.01, 4.02, 4.03 & 4.04)

o Potable water from an approved source shall be available at all times. The domestic water supply system of the building shall be connected to such approved source, shall not be subject to contamination, and shall not be connected to unsafe water supplies.

o The source of water supply for a one- or two-family dwelling shall be a public water supply system, when such system is within 100 ft. of the premises on which the building is located, measured along a street, alley, or right of way, and a connection may lawfully be made thereto.

o The source of water supply for a multiple dwelling shall be a public water supply system, when such system is within 500 ft of the premises on which the building is located, measured along a street, alley, or right of way, and a connection may lawfully be made thereto.

o Water supply systems shall be installed and maintained to provide at all times a supply of water to plumbing fixtures, devices, and appurtenances in sufficient volume and at pressures adequate to enable them to function satisfactorily.
(111-502.2)

o All plumbing fixtures shall be connected to an approved system of water supply and provided with hot and cold running water necessary for its normal operation.
(505 (d))

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

- o Plumbing fixtures to be properly connected to an approved water system. (302.1)
- o Every dwelling unit shall have connected to the kitchen sink, lavatory, and tub or shower an adequate supply of both cold water and hot water. All water shall be supplied through an approved distribution system connected to a potable water supply. (302.3)

- o Every sink, lavatory, bathtub or shower, drinking fountain, water closet or other facility shall be properly connected to either a public water system or to an approved private water system. All sinks, lavatories, bathtubs and showers shall be supplied with hot and cold running water. (PM-504.1)
- o The water supply shall be maintained free from contamination and all water inlets for plumbing fixtures shall be located above the overflow rim of the fixture. (PM-504.2)
- o The water supply systems shall be installed and maintained to provide at all times a supply of water to plumbing fixtures, devices, and appurtenances in sufficient volume and at pressures adequate to enable them to function satisfactorily. (PM-504.3)

- o Provide plumbing facilities for each dwelling unit with satisfactory hot and cold water supply and distribution. (B.8.5)
- o The building water supply distribution system shall be connected to an approved public or private water supply system. (B.3.5)

- o The plumbing system and its appurtenances for each building shall provide satisfactory water supply. (9-5 (a))

PLUMBING REQUIREMENTS (Cont.)

SUBJECT MATTER

**APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.**

**NEW YORK STATE MODEL
HOUSING CODE,
1974**

**UNIFORM HOUSING CODE,
1979 EDITION (ICBO)**

2. Sewage Drainage System

- o Kitchen sink, lavatory sink, flush water closet and a bathtub or shower connected to a sewer system approved by the appropriate authority.
(4.01.01, 4.02, 4.03 & 4.04)

- o Plumbing fixtures shall drain to a sewage system connected to a public sewer or approved system of sewage disposal.
- o The means of sewage disposal for a one- or two-family dwelling shall be a public sanitary or combined sewer system, when it is within 100 ft. of the premises on which the building is located, measured along a street, alley, or right of way, and a connection may lawfully be made thereto.
- o The means of sewage disposal for a multiple dwelling shall be a public sanitary or combined sewer system, when it is within 500 ft. of the premises on which the building is located, measured along a street, alley, or right of way, and a connection may lawfully be made thereto.
- o No sewage from a plumbing system shall be discharged into the waters of the State of New York (as defined in State law), unless specifically approved by the authority having jurisdiction, under and in accordance with State law.
- o Adequate cleanouts shall be provided and maintained so that the pipes may be readily cleaned.

(H1-502.3)

- o All plumbing fixtures shall be connected to a sanitary sewer or to an approved private sewage disposal system. (505 (d))

STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)

BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)

CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)

HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978

o Plumbing fixtures to be properly connected to an approved sewer system. (302.1)

- o Every sink, lavatory, bathtub or shower, drinking fountain, water closet or other facility shall be properly connected to either a public sewer system or to an approved private sewage disposal system. (PM-505.1)
- o Every plumbing stack, waste and sewer line shall be so installed and maintained as to function properly and shall be kept free from obstructions, leaks and defects to prevent structural deterioration or health hazards. All repairs and installations shall be made in accordance with the provisions of the building code or plumbing code. (PM-505.2)

- o Provide plumbing facilities for each dwelling unit with satisfactory sanitary drainage and venting of sanitary drainage system. (B.8.5)
- o The building sanitary drainage shall be connected to an approved public or private sanitary sewer system. (B.3.5)

o The plumbing system and its appurtenances for each building shall provide satisfactory drainage and venting of fixtures. (9-5 (a))

PLUMBING REQUIREMENTS (Cont.)

SUBJECT MATTER

**APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.**

**NEW YORK STATE MODEL
HOUSING CODE,
1974**

**UNIFORM HOUSING CODE,
1979 EDITION (ICBO)**

3. Water Heating, Storage and Distribution

- o Provide at all times an adequate amount of heated running water under pressure. (4.01.01 & 4.03)
- o "heated water" is defined as water heated to a temperature of not less than 120°F at the outlet. (2.26)

- o In one- and two-family dwellings, not wholly owner occupied, and in all multiple dwellings - hot water shall be furnished within a temperature range of 130°F to 140°F from 6:00 a.m. to midnight. (H1-502.5 (b))
- o Hot water supply systems shall be provided with safety devices designed to relieve hazardous pressures and excessive temperatures. (H1-502.2 (e))

- o An approved system of water supply provided with hot running water necessary for normal operation. (505 (d))
- o "Hot water" is defined as hot water supplied to plumbing fixtures at a temperature of not less than 110°F. (401)

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB: 1978**

o Every dwelling shall have water heating facilities which are properly installed and maintained in a safe and good working condition and are capable of heating water to such a temperature as to permit an adequate amount of water to be drawn at every required kitchen sink, lavatory basin, bathtub or shower at a temperature of not less than 120°F. Minimum storage capacity of the water heater shall be thirty (30) gallons. Such water heating facilities shall be capable of meeting the requirements of this sub-section when the dwelling or dwelling unit heating facilities required under the provisions of this ordinance are not in operation.
(302.4)

o Where hot water is provided, water heating facilities shall be installed in an approved manner, properly maintained, and properly connected with hot water lines to the fixtures required to be supplied with hot water. Water heating facilities shall be capable of heating water to such a temperature as to permit an adequate amount of water to be drawn at every required kitchen sink, lavatory basin, bathtub, shower, and laundry facility or other similar units, at a temperature of not less than one hundred and twenty (120) degrees F.
(PM-504.4)

o Provide properly installed, connected and maintained hot water supply and distribution system.
(B.8.5)

o Each building and living unit within the building shall have domestic hot water in quantities sufficient for the needs of the occupants.
o Existing water heating and storage equipment shall be in good serviceable condition, or otherwise replacement of the equipment shall be considered by the proper authority.
o No water heater shall be installed in any room used or designed to be used for sleeping purposes. No gas or oil-fired water heater shall be located in a bathroom clothes closet, under any stairway, or in a confined space with access only to the above locations.
o All fuel burning water heaters shall be connected to a vent leading to the exterior.
(9-6)
o Storage capacity should be not less than 30 gallons for gas or oil-fired water heaters and 52 gallons for electric water heaters except that electric water heaters restricted by "off peak" control limitations would have a minimum capacity of 66 gallons (above capacities for one- and two-family dwellings).
(Guides, 9-13)

PLUMBING REQUIREMENTS (Cont.)

SUBJECT MATTER

APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.

NEW YORK STATE MODEL
HOUSING CODE,
1974

UNIFORM HOUSING CODE,
1979 EDITION (ICBO)

4. Minimum Facilities/Plumbing
Fixtures

- o Every dwelling shall have a room equipped with a kitchen sink in good working condition and properly connected. (4.01.01)
- o Within every dwelling unit there shall be a non-habitable room which affords privacy to a person within said room and which is equipped with a flush water closet in good working condition. Said flush water closet shall be equipped with easily cleanable surfaces and be properly connected. (4.02)
- o Within every dwelling unit there shall be a lavatory sink. Said lavatory sink may be in the same room as the flush water closet, or, if located in another room, the lavatory sink shall be located in close proximity to the door leading directly into the room in which said water closet is located. The lavatory sink shall be in good working condition and properly connected. (4.03)
- o Within every dwelling unit there shall be a room which affords privacy to a person within said room and which is equipped with a bathtub or shower in good working condition. Said bathtub or shower may be in the same rooms as the flush water closet or in another room and shall be properly connected. (4.04)

- o Buildings and structures shall be provided with plumbing systems designed to dispose of the sewage from all fixtures and to furnish cold water to every water closet and urinal, and hot and cold water to every sink, lavatory, bathtub, and shower, required therein.
- o There shall be provided within each dwelling unit, plumbing fixtures consisting of at least:
 - One kitchen sink,
 - One water closet,
 - One bathtub or shower, and
 - One lavatory (H1-502.2)

- o Every dwelling unit shall be provided with a bathroom equipped with facilities consisting of a water closet, lavatory, and either a bathtub or shower. (505 (a))
- o Every dwelling unit shall be provided with a kitchen. Every kitchen shall be provided with a kitchen sink. Wooden sinks or sinks of similarly absorbent material shall not be permitted. (505 (c))

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

o Every dwelling unit shall contain not less than a kitchen sink, lavatory, tub or shower, and a water closet all in good working condition and properly connected to an approved water and sewer system.

(302.1)

o Every dwelling unit shall include its own plumbing facilities which are in proper operating condition, can be used in privacy, and are adequate for personal cleanliness and the disposal of human waste.

(PM-501.1)

o Every dwelling unit shall contain within its walls, a room separate from habitable rooms, which affords privacy and a water closet supplied with cold running water. The lavatory may be placed in the same room as the water closet, or, if located in another room, the lavatory shall be located in close proximity to the door leading directly into the room in which said water closet is located. The lavatory shall be supplied with hot and cold running water.

(PM-501.1.1)

o Every dwelling unit shall contain a room which affords privacy to a person in said room and which is equipped with a bathtub or shower supplied with hot and cold running water.

(PM-501.1.2)

o Every dwelling unit shall contain a kitchen sink apart from the lavatory required under Section M-501.1.1 and be supplied with hot and cold running water. (PM-501.1.3)

o Each dwelling unit shall be provided with kitchen or kitchenette space which contains a sink with counter work space and has hot and cold running water, and has provisions for installation of cooking and refrigeration equipment, and for storing kitchen utensils.

o Bathroom facilities shall include the following.

1-Water closet: Each dwelling unit shall contain a water closet supplied with running water in an enclosed area not less than thirty (30) inches in width and not less than eighteen (18) inches clear space in front of the water closet therein.

2-Bathing: Each dwelling unit shall contain a bathtub or shower with a supply of hot and cold running water, and in a bathroom separate from the habitable rooms.

3-Lavatory: Each dwelling unit shall contain a lavatory with a supply of hot and cold running water. The lavatory shall be located in the same room as the water closet, or immediately adjacent thereto.

(B.4.1)

o Each living unit shall have a specific kitchen space, which contains a sink with counter work space and has hot and cold running water.

(4-2 (e))

o Complete bathing and sanitary facilities shall be provided within each living unit; they shall consist of a water closet, a tub or shower, and a lavatory. Provide an adequate supply of hot water to the tub or shower stall and lavatory, and cold water to all fixtures. Arrangement of fixtures shall provide for the comfortable use of each fixture and permit at least a 90 degree door swing. Wall space shall be available for a mirror or medicine cabinet and towel bars.

o Additional requirements for housing for the elderly:

a-Bathtubs shall be at least 5 ft. long and shall be provided with at least two grab-bars.

b-A stall shower with a seat and grab-bars may be provided in lieu of a bathtub.

c-Tub or shower bottom surfaces shall be slip resistant

d-Grab-bars shall be installed to sustain a dead weight of 250 pounds for 5 minutes.

e-Fixtures in bathrooms of at least 10 percent of the living units of each type (other than types containing more than one floor within the living unit) shall be arranged.

PLUMBING REQUIREMENTS (Cont.)

SUBJECT MATTER

**APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.**

**NEW YORK STATE MODEL
HOUSING CODE,
1974**

**UNIFORM HOUSING CODE,
1979 EDITION (ICBO)**

4. Minimum Facilities/Plumbing
Fixtures (cont.)

5. Installation/Maintenance
Requirements

- o Every plumbing fixture and all water and waste pipes shall be properly installed and maintained in good sanitary working condition. (7.09)
- o Every water closet compartment, bathroom and kitchen floor surface shall be constructed and maintained so as to be reasonably impervious to water and so as to permit such floor to be easily kept in a clean and sanitary condition. (7.10)
- o Every plumbing fixture and pipe, and every other facility, piece of equipment, or utility which is present in a dwelling or dwelling unit, or which is required under this ordinance, shall be constructed and installed in conformance with the appropriate statutes, ordinances and regulations. (7.11)

- o Plumbing systems shall be maintained in good, safe, sanitary, and serviceable condition. (H1-5C2.1)
- o Plumbing fixtures shall be made of smooth nonabsorbent material, and free from concealed fouling surfaces.
- o Plumbing fixtures shall be spaced to be readily accessible for their intended use.
- o Plumbing fixtures shall be located in spaces that are accessible, lighted, and ventilated (H1-502.6)

- o All plumbing fixtures shall be of an approved glazed earthenware type or of a similarly nonabsorbent material. (505 (d))
- o All sanitary facilities shall be installed and maintained in safe and sanitary condition and in accordance with all applicable laws. (505 (g))

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

			<p>and space provided to permit access and use by a person in a wheelchair. In all such bathrooms, the entire length of at least one side of the tub shall be accessible to the bather. A stall shower, if provided, shall be equipped with a non-scald valve, shall be at least 4 ft. sq., without curbs, and with handrails and access in accordance with ANSI A117.1. The lavatory shall comply with ANSI A117.1. (4-2 (f))</p>
<p>o Every plumbing fixture and water and waste pipe shall be properly installed and maintained in good sanitary working condition, free from defects, leaks, and obstructions. (302.1)</p>	<p>o All plumbing fixtures shall be maintained in a safe and useable condition. All plumbing fixtures shall be of approved non-absorbent material. (PM-503.1)</p> <p>o Water supply lines, plumbing fixtures, vents and drains shall be properly installed, connected and maintained in working order and shall be kept free from obstructions, leaks and defects and capable of performing the function for which they are designed. All repairs and installations shall be made in accordance with the provisions of the building code or plumbing code. (PM-503.2)</p> <p>o All plumbing facilities shall be maintained in a clean and sanitary condition by the occupant so as not to breed insects and rodents or produce dangerous or offensive gases or odors. (PM-503.3)</p>	<p>o Plumbing facilities which are properly installed, connected and maintained shall be provided for each dwelling unit, and as necessary for the common or utility spaces of the building, to provide satisfactory:</p> <ul style="list-style-type: none"> -Hot and cold water supply and distribution, -Sanitary drainage, -Venting of sanitary drainage system, -Operation of fixtures, <p>o Existing plumbing systems, or portions thereof, including sewers, to remain in use shall operate free of fouling and clogging, and shall not have cross connections which may permit contamination of the water supply or back-siphonage between fixtures</p> <p>o New plumbing systems or alterations and additions to plumbing</p>	<p>o Plumbing systems including building sewers shall operate free of fouling and clogging, and not have cross connections which permit contamination of water supply or back-siphonage between fixtures. (9-5 (c))</p> <p>o For additions or changes made to present plumbing, and for new installations the provisions of 4910 .1 MPS for Multi-family Housing should be used as a guide, and plumbing equipment and materials should comply with and be installed in accordance with local and state codes or with the model code having jurisdiction in the area. (Guides, 9-12)</p>

PLUMBING REQUIREMENTS (Cont.)

SUBJECT MATTER	APHA-CDC RECOMMENDED HOUSING MAINTENANCE AND OCCUPANCY ORDINANCE, 1975 REV.	NEW YORK STATE MODEL HOUSING CODE, 1974	UNIFORM HOUSING CODE, 1979 EDITION (ICBO)
5. <u>Installation/Maintenance Requirements</u> (cont.)			
6. <u>Water Conservation</u>	(No specific requirement)	(No specific requirement)	(No specific requirement)
7. <u>Prohibited Uses</u>	(No specific requirement)	o Privies are prohibited on residential premises. (111-502.5 (h))	(No specific requirement)
8. <u>Water Supply Tanks</u>	(No specific requirement)	<ul style="list-style-type: none"> o Water supply tanks shall be maintained watertight, verminproof, and resistant to corrosion. o Supports for tanks shall be of non-combustible construction. o Tanks and their supports shall not be used to support equipment or structures other than for tank use, except where specially designed for such other use. o Means for emptying water supply tanks shall be maintained in proper working condition. o Potable water supply tanks for domestic supply and standpipe or automatic sprinkler systems shall be maintained to furnish water in sufficient quantity and pressure for such systems. (111-502.8) 	(No specific requirement)

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

	<p>o Plumbing fixtures shall be installed as to permit easy access for cleaning both the fixture and the area about it. (PM-503.4)</p>	<p>systems shall be installed in accordance with the requirements of the plumbing code. (B.8.5)</p>	
(No specific requirement)	<p>o Plumbing fixtures which are replaced shall be of water saving construction and use as may be required by local energy and plumbing codes. (PM-503.5)</p>	(No specific requirement)	(No specific requirement)
(No specific requirement)	<p>o Toilet rooms and bathrooms shall not be used as a passageway to a hall or other space, or to the exterior. A toilet room or bathroom in a dwelling unit shall be accessible from any sleeping room without passing through another sleeping room. (PM-503.2)</p>	(No specific requirement)	(No specific requirement)
(No specific requirement)	(No specific requirement)	(No specific requirement)	(No specific requirement)

PLUMBING REQUIREMENTS (Cont.)

SUBJECT MATTER	APHA-CDC RECOMMENDED HOUSING MAINTENANCE AND OCCUPANCY ORDINANCE, 1975 REV.	NEW YORK STATE MODEL HOUSING CODE, 1974	UNIFORM HOUSING CODE, 1979 EDITION (ICBO)
9. <u>Storm Drainage System</u>	<p>o Unless other provisions are made, gutters, leaders and down-spouts shall be provided and maintained in good working condition as to provide proper drainage of storm water. (7.04)</p>	<p>o An approved system of storm water disposal shall be provided for the safe and efficient drainage of roofs and paved areas, yards and courts, and other open areas on the premises.</p> <p>o The means for storm water disposal for a one- or two-family dwelling shall be a public storm or combined sewer system, when it is within 100 feet of the premises on which the building is located, measured along a street, alley, or right-of-way, and a connection may lawfully be made thereto.</p> <p>o The means for storm water disposal for a multiple dwelling shall be a public storm or combined sewer system, when it is within 500 feet of the premises on which the building is located, measured along a street, alley, or right-of-way, and a connection may lawfully be made thereto.</p> <p>o No storm water shall be drained into sewers intended for sewage only, nor be discharged onto public sidewalks. (H1-502.4)</p>	(No specific requirement)

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

(No specific requirement)

o An approved system of storm water disposal shall be provided and maintained for the safe and efficient drainage of roofs and paved areas, yards and courts, and other open areas on the premises.
(PM-506.0)

o Provision shall be made for roof drainage as required by applicable code or ordinance. (B.7.1)

o Each dwelling shall have a controlled method of disposal of water from roofs where necessary to prevent damage to the property, and to avoid causing unsightly staining of walls and windows where adequate roof overhangs are not provided.
(8-3)

Faint header text, possibly containing a title or page number, which is illegible due to blurriness.

Column 1	Column 2	Column 3

Appendix L
HEALTH AND SANITATION

HEALTH AND SANITATION

SUBJECT MATTER

APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.

NEW YORK STATE MODEL
HOUSING CODE,
1974

UNIFORM HOUSING CODE,
1979 EDITION (ICBO)

1. Disposal of Trash, Garbage and Refuse

- o Every occupant of a dwelling or dwelling unit shall store and dispose of all his rubbish in a clean, sanitary and safe manner. (3.04)
- o Every occupant of a dwelling or dwelling unit shall store and dispose of all his garbage, refuse, and any other organic waste which might provide food for insects and/or rodents in a clean, sanitary, safe manner. All garbage cans and refuse containers shall be rat-proof, insect-proof, watertight, structurally strong to withstand handling stress, easily filled, emptied and cleaned; shall be provided with tight-fitting covers or similar closures; and shall be maintained at all times in a clean sanitary condition. Plastic bags may be used as garbage and refuse container liners, but shall not be used without the container for on-site storage of garbage or refuse. (3.05)
- o Garbage and refuse cans in storage areas shall be placed on concrete slabs or on fixed platforms which are at least eighteen (18) inches above the ground, or on a mobile or movable platform. (3.05.01)
- o Bulk storage containers which are used for the storage of garbage, refuse and/or other putrescible waste shall be placed on concrete platforms which are constructed to minimize spillage onto the adjacent areas and shall be equipped with

- o Adequate sanitary facilities and methods shall be used for the collection, storage, handling, and disposal of garbage and refuse. Storage containers shall be of an approved flame-resistant water-proof type.
- o The accumulation or storage of garbage or refuse in public halls or stairways shall be prohibited. (H1-605)
- o Refrigerators, and similar equipment with locking mechanisms, shall not be discarded, abandoned, or stored on premises accessible to children, without first removing the locking devices or the hinges of the doors.
- o Junked vehicles, equipment, and materials shall not be stored in open areas of premises. (H1-606)

- o Inadequate sanitation shall include lack of adequate garbage and rubbish storage and removal facilities as determined by the health officer. (1001 (b)) (Definition of "Substandard Building")

STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)

BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)

CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)

HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978

o Every tenant of a dwelling or dwelling unit shall dispose of all his garbage and any other organic waste which might provide food for rodents and all rubbish in a clean and sanitary manner by placing it in the garbage disposal facilities or garbage or rubbish storage containers.

(307.3)

o It shall be unlawful for the owner or occupant of a residential building, structure, or property to utilize the premises of such residential property for the open storage of any abandoned motor vehicle, ice box, refrigerator, stove, glass building material, building rubbish or similar items. It shall be the duty and responsibility of every such owner or occupant to keep the premises of such residential property clean and to remove from the premises all such abandoned items as listed above, including but not limited to weeds, dead trees, trash garbage, etc., upon notice from the Housing Official.

(307.4)

o Every occupant of a structure or part thereof shall dispose of all his rubbish in a clean and sanitary manner by placing it in rubbish containers equipped with tight fitting covers as required by this code.

(PM-801.2)

o Every occupant of a structure or part thereof shall dispose of his garbage in a clean and sanitary manner by placing it in garbage disposal facilities, or if such facilities are not available, by removing all non-burnable matter and securely wrapping such garbage and placing it in tight garbage storage containers as required by this code, or by such other disposal method as may be required by applicable laws or ordinances. (PM-801.3)

o Every dwelling unit shall be supplied with an approved garbage disposal facility, which may be any adequate mechanical garbage disposal unit (mechanical sink grinder), in each dwelling unit, or an incinerator unit, to be approved by the building official, in the structure for the use of the occupants of each dwelling unit, or an approved outside garbage can or cans. Such facilities shall be sufficient to meet the needs of the occupants.

(PM-801.4)

o Every dwelling unit shall be supplied with approved containers and covers for storage of rubbish, and

(No specific requirements)

n Every dwelling and multifamily building shall be supplied with a means of disposal or removal of trash and garbage.
o Where disposal will not take place promptly there shall be a convenient and appropriate temporary and sanitary storage for trash and garbage provided, which is inaccessible to rodents. (4-9)
o Where a flue-fed incinerator is used for disposal of waste material, hoppers should not open directly into a public corridor, but open in a closet or room of not less than 20 sq. ft. in area, which has a self-closing door. (Guides, 4-17)

HEALTH AND SANITATION (Cont.)

SUBJECT MATTER

APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.

NEW YORK STATE MODEL
HOUSING CODE,
1974

UNIFORM HOUSING CODE,
1979 EDITION (ICBO)

<p>1. <u>Disposal of Trash, Garbage and Refuse (cont.)</u></p>	<p>drains properly connected to an approved sewer system. In the immediate vicinity of the bulk storage container there shall be a water faucet for use in cleaning each bulk storage container at the site of storage or there shall be provided some other means approved by the appropriate authority for the cleansing of the container. All bulk storage containers shall be equipped with self-closing lids. (3.05.02)</p> <ul style="list-style-type: none"> o The total capacity of all provided garbage and/or refuse cans and bulk storage containers shall be sufficient to meet the needs of the occupants of the dwelling. (3.06) o Every owner of a dwelling containing three (3) or more dwelling units shall supply facilities or refuse containers for the sanitary and safe storage and/or disposal of rubbish and garbage. In the case of single or two (2) family dwellings it shall be the responsibility of each occupant to furnish such facilities or refuse containers. (3.07) 		
<p>2. <u>Protection from Insects, Vermin, Rodents and Other Infestation</u></p>	<ul style="list-style-type: none"> o The owner of a dwelling unit shall be responsible for providing and hanging all screens and double or storm doors and windows whenever the same are required under the provisions of this ordinance or any rule or regulation adopted pursuant thereto, except where there is a written 	<ul style="list-style-type: none"> o Grounds, buildings, and structures shall be maintained free of insect, vermin, and rodent harborage and infestation. o Where rodent infestation exists, windows and other openings in basements and cellars shall be screened to prevent entrance of rodents 	<ul style="list-style-type: none"> o Inadequate sanitation shall include infestation of insects, vermin or rodents as determined by the health officer. (1001 (b)) (Definition of "Substandard Building")

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

Limited to weeds, dead trees, trash, garbage, etc., upon notice from the Housing Official. (307.4)

the owner, operator or agent in control of such dwelling shall be responsible for the removal of such rubbish. (PM-801.5)
o Garbage or refuse shall not be allowed to accumulate or be stored in public halls or stairways. (PM-303.5.1)

o Every occupant of a single dwelling building and every owner of a building containing two or more dwelling units shall be responsible for the extermination of any insects, rodents, or other pests within the building or premises. (307.5)

o All structures shall be kept free from insect and rodent infestation, and where insects or rodents are found, they shall be promptly exterminated by acceptable processes which will not be injurious to human health. After extermination, proper precautions shall be taken to prevent reinfestation. (PM-303.6)

(No specific requirement)

o Each building and all exterior appurtenances on the site shall be effectively protected against rodents, termites or other vermin infestation.
o Inspection and Correction. A careful inspection by qualified persons shall be made of each building and accessory structure on each property

HEALTH AND SANITATION (Cont.)

SUBJECT MATTER

APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.

NEW YORK STATE MODEL
HOUSING CODE,
1974

UNIFORM HOUSING CODE,
1979 EDITION (ICBO)

2. Protection from Insects, Vermin,
Rodents and Other Infestation
(cont.)

agreement between the owner and occupant. In the absence of such an agreement, maintenance or replacement of screens, storm doors and windows, once installed in any one (1) season becomes the responsibility of the occupant. The occupant's responsibility shall be exclusive to his or her dwelling unit. (3.08)

o Every occupant of a dwelling containing a single dwelling unit shall be responsible for the extermination of insects, and/or rats, on the premises; and every occupant of a dwelling unit in a dwelling containing more than one (1) dwelling unit shall be responsible for such extermination whenever his dwelling unit is the only one infested. Notwithstanding, the foregoing provisions of this subsection, whenever infestation is caused by failure of the owner to maintain a dwelling in a ratproof or reasonable insectproof condition, extermination shall be the responsibility of the owner. Whenever infestation exists in two (2) or more of the dwelling units in any dwelling, or in the shared or public parts of any dwelling containing two (2) or more dwelling units, extermination thereof shall be the responsibility of the owner. (3.09)

o No occupant of a dwelling or dwelling unit shall accumulate rubbish, boxes, lumber, scrap metal, or any

o From May 1st to October 1st, entrances to residential buildings and structures shall be provided with self-closing doors, devices, or screens, and windows and other openings used for ventilation shall be appropriately screened, except that screens shall not be required in the upper stories of multiple dwellings which are free of mosquitoes, flies, and other flying insects. (H1-604)

STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)

BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)

CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)

HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978

- o The owner of any structure shall be responsible for extermination within the structure prior to renting, leasing or selling the structure. (PM-802.1)
- o The tenant-occupant of any structure shall be responsible for the continued rodent-proof condition of the structure, and if the tenant-occupant fails to maintain the rodent-proof condition the cost of extermination shall be the responsibility of the tenant-occupant. (PM-802.2)
- o The occupant of a structure containing a single dwelling unit or of a single non-residential structure shall be responsible for the extermination of any insects, rodents or other pests in the structure or on the premises. (PM-802.3)
- o Every owner, agent or operator of two (2) or more dwelling units or multiple occupancies, or non-residential structures and rooming houses, shall be responsible for the extermination of any insects, rodents or other pests in the public or shared areas of the structure and premises. When infestation is caused by failure of an occupant of a unit of the two (2) or more dwelling units or by an occupant or leasee of a non-residential structure to prevent such infestation in the area which he occupies, the occupant shall be responsible for such extermination. (PM-802.4)

- for evidence of actual or potential infestation or access channels. Existing buildings having defects that permit the entrance of rodents, termites or other vermin shall be corrected by appropriate measures. Damaged or deteriorated structural members shall be replaced. (7-7)
- o All foundation and wall openings near or below grade such as openings around pipes, conduits, cracks in deteriorated walls, broken masonry or concrete should be protected against the passage of rodents by closing such openings with cement mortar, masonry or noncorrosive sheet metal. Where wire mesh protection is used the size of openings should not exceed 1/2 inch. (Guides, 7-12)

HEALTH AND SANITATION (Cont.)

SUBJECT MATTER

APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.

NEW YORK STATE MODEL
HOUSING CODE,
1974

UNIFORM HOUSING CODE,
1979 EDITION (ICBO)

2. Protection from Insects, Vermin,
Rodents and Other Infestation
(cont.)

- other materials in such a manner that may provide a rat harborage in or about any dwelling or dwelling unit. Stored materials shall be stacked neatly in piles elevated at least eighteen (18) inches above the ground or floor. (3.10)
- o No owner or occupant of a dwelling or dwelling unit shall store, place, or allow to accumulate any materials which may serve as food for rats in a site accessible to rats. (3.12)
 - o Every dwelling, multiple dwelling, rooming house or accessory structure and the premises on which located shall be maintained in a rat-free and ratproof condition. (7.06)
 - o All openings in the exterior walls, foundations, basements, ground or first floors and roofs which have a half-inch diameter or more opening shall be ratproofed in an approved manner if they are within forty-eight (48) inches of the existing exterior ground level immediately below such openings, or if they may be reached by rats from the ground by climbing unguarded pipes, wires, cornices, stairs, roofs, and other items such as trees or vines or by burrowing. (7.06.01)
 - o All windows located at or near ground level used or intended to be used for ventilation, all other openings located at or near ground level, and all exterior doorways which might provide an entry for

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

o Continuing or repeated incidents of rodent infestation determined from the official records shall require the installation of rat and vermin proof walls. The rat and vermin proof walls shall be installed in accordance with the building code.
(PM-802.5)

HEALTH AND SANITATION (Cont.)

SUBJECT MATTER

APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.

NEW YORK STATE MODEL
HOUSING CODE,
1974

UNIFORM HOUSING CODE,
1979 EDITION (ICBO)

2. Protection from Insects, Vermin,
Rodents and Other Infestation
(cont.)

rats, shall be supplied with adequate screens or such other devices as will effectively prevent the entrance of rats into the structure.
(7.06.02)

- o All sewers, pipes, drains or conduits shall be constructed to prevent the ingress or egress of rats to or from a building. (7.06.03)
- o Interior floors of basements, cellars and other areas in contact with the soil shall be rat-proofed in an approved manner. (7.06.04)
- o Materials stored outside the dwelling shall be stacked and elevated so that there will be at least an eighteen (18) inch opening between the material and the ground level so as to prevent the creation of a rat harborage area. No stacking or piling of material shall take place against the exterior walls of the structure. (7.06.05)
- o Any materials used for rat-proofing shall be acceptable to the appropriate authority. (7.06.06)

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

HEALTH AND SANITATION (Cont.)

APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.

NEW YORK STATE MODEL
HOUSING CODE,
1974

UNIFORM HOUSING CODE,
1979 EDITION (ICBO)

SUBJECT MATTER

3. Lead-Based Paint Restrictions

- o Every owner of a dwelling or dwelling unit shall provide and maintain the dwelling or dwelling unit free from hazards to health due to the presence of toxic substances, e.g., lead-based paint, as determined by the appropriate authority. (3.15)
- o No owner or occupant shall apply a lead-based paint to any surface in any dwelling, dwelling unit, rooming house and/or rooming unit. (3.16)

- o Paint containing more than one percent of metallic lead, based on the total non-volatile content of the paint, shall not be used to paint any interior wall, ceiling, window, door, or other interior surface. Where such paint on interior surfaces is peeling, or otherwise presents a health hazard it shall be promptly removed and the surface safely and appropriately refinished or resurfaced. (H1-603c)

(No specific requirement)

4. Sanitary Conditions

- o Every occupant of a dwelling or dwelling unit shall maintain in a clean and sanitary condition that part or those parts of the dwelling, dwelling unit and premises thereof that he occupies and controls.(3.03)
- o Every occupant of a dwelling unit shall keep all supplied fixtures and facilities therein in a clean, sanitary, and operable condition and shall be responsible for the exercise of reasonable care in the proper use and operation thereof.(3.13)

- o Floors, walls, including windows and doors, ceilings, and other interior surfaces shall be maintained in good, clean, and sanitary condition. Peeling paint, cracked or loose plaster, decayed wood, and other defective surface conditions shall be eliminated. (H1-603b)

- o All sanitary facilities shall be installed and maintained in safe and sanitary condition and in accordance with all applicable laws. (505 (g))

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

<p>(No specific requirement)</p>	<ul style="list-style-type: none"> o Lead-based paint with a lead content of more than five-tenths of one percent (0.5%) shall not be applied to any interior or exterior surface of a dwelling, dwelling unit or child care facility, including fences and outbuildings at these locations. Existing interior and exterior painted surfaces of dwelling units and child care facilities that contain an excess of five-tenths of one percent (0.5%) lead shall be removed or covered with paneling or other suitable covering approved by the code official. (PM-303.3.1) 	<ul style="list-style-type: none"> o Existing interior finish surfaces containing a lead content greater than five tenths (.5) of one (1) percent shall be removed and replaced or covered with a lead-free material. (B.7.2) 	<ul style="list-style-type: none"> o Treatment of exterior surfaces to eliminate hazard of lead-based paint poisoning shall be as determined by the local HUD office. (8-2) o Treatment of interior surfaces to eliminate hazard of lead-based paint poisoning shall be as determined by the local HUD office. (8-6) o No paint shall contain more than .06 percent lead by weight calculated as lead metal in the total non-volatile content of liquid paints or in the dried film of paint already applied. (8-8)
<ul style="list-style-type: none"> o Every owner of a multiple dwelling shall be responsible for maintaining in a clean and sanitary condition the shared or common areas of the dwelling and premises thereof. (307.1) o Every tenant of a dwelling unit shall keep in a clean and sanitary condition that part of the dwelling, dwelling unit and premises thereof which he occupies or which is provided for his particular use (307.2) o Every tenant of a dwelling unit shall keep all plumbing fixtures therein in a clean and sanitary condition and shall be responsible for the exercise of reasonable care in the proper use and operation thereof. (307.6) 	<ul style="list-style-type: none"> o Every toilet, bathroom and kitchen floor surface shall be constructed and maintained so as to be substantially impervious to water and so as to permit such floor to be easily kept in a clean and sanitary condition. (PM-303.3.2) o In every building, cellars, basements and crawl spaces shall be maintained reasonably free from dampness to prevent conditions conducive to decay or deterioration of the structure. (PM-303.4) o The interior of every structure shall be maintained in a clean and sanitary condition free from any accumulation of rubbish, refuse or garbage. Rubbish, garbage, and other refuse shall be properly kept inside temporary storage facilities. (PM-303.5) 	<p>(No specific requirement)</p>	<p>(No specific requirement)</p>



**Appendix M
ELEVATORS**

M-1

ELEVATORS

SUBJECT MATTER

APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.

NEW YORK STATE MODEL
HOUSING CODE,
1974

UNIFORM HOUSING CODE,
1979 EDITION (ICBO)

1. Elevators, Dumbwaiters and Escalators in Multiple Dwellings

(No specific requirement)

- o Elevators and escalators shall be maintained in good and safe operating condition, and adequately lighted at all times. (11-208)
- o Elevators, dumbwaiters, and escalators shall be designed, installed, and maintained to safely sustain the loads to which they are subject, to operate properly, and to be free of physical and fire hazards.
- o Elevator and power operated dumb-waiter cars shall be provided with durable signs, in conspicuous locations within such cars, on which the rated capacity, in pounds, is stated. Signs in passenger elevators shall also state the total number of passengers permitted, determined by dividing the rated capacity by 150.
- o Elevator cars shall be provided with approved means for transmitting a signal outside the hoistway in case of emergency, in accordance with generally accepted standards.
- o Hoistways and pits shall be maintained free of rubbish or other debris.
- o Machine rooms shall be maintained free of oil and grease, including oily and greasy clothes, rags, and other such materials, and shall not be used for storage of articles

(No specific requirement)

STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)

BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)

CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)

HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978

(No specific requirement)

- o Elevators, dumbwaiters, and escalators shall be maintained to safely sustain the loads to which they are subject, to operate properly, and to be free of physical and fire hazards.
(PM-603.1)

(No specific requirement)

- o Where Provided, an elevator shall furnish convenient and safe ascent and descent to all living units and service areas. The character and type of elevator service and equipment should be appropriate to the building being rehabilitated and to its occupants.
- o Elevators shall be provided in buildings of:
 - Three or more stories in housing for the elderly
 - Two story housing for the elderly where central dining facilities are located on a floor level other than the floor level of living units which do not have cooking and dining facilities
 - Two or more stories in housing with living units above the first floor intended for occupancy by wheelchair users
- o In buildings required to be accessible to the physically handicapped, at least one elevator shall comply with ANSI A117.1. (4.7)
- o Four story buildings should have one or more elevators where there are six or more living units per floor and where the continued acceptance of the property would be doubtful if there were no elevator service. Buildings of more than four stories having six or more living units per floor should have appropriate elevator service provided. (4-16, Guides)

ELEVATORS (Cont.)

SUBJECT MATTER

APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.

NEW YORK STATE MODEL
HOUSING CODE,
1974

UNIFORM HOUSING CODE,
1979 EDITION (ICBO)

1. ELEVATORS, DUMBWAITERS AND ESCA-
LATORS IN MULTIPLE DWELLINGS.
(cont.)

or materials unnecessary for the
maintenance of the elevator or
dumbwaiter. Flammable liquids
shall not be kept in such rooms.
o Safety devices and electrical
protective devices shall be
operative at all times, except
during tests, inspections or
repairs. (111-514)

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

o The MPS for Multi-family housing (HUD 4910.1) should be used as a guide for the design and installation of new elevators.
(9-14, Guides)



Appendix N
CHIMNEYS, VENTS AND INCINERATORS

CHIMNEYS, VENTS & INCINERATORS

SUBJECT MATTER

APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.

NEW YORK STATE MODEL
HOUSING CODE,
1974

UNIFORM HOUSING CODE,
1979 EDITION (ICBO)

1. Requirements for chimneys, flues,
and vents

- Construction, installation,
serviceability, durability

o Constructed and installed in con-
formance with local regulations and
ordinances. (7.11)

o Structurally safe, durable, smoke
tight, and noncombustible.
o Effectively convey products of
combustion to the outer air.
o Masonry chimneys to have noncom-
bustible foundations.
o Sufficient clearances from build-
ing construction.
o No flue shall have smoke pipe or
gas vent connections in more than
one story of a building.
o Fireplaces and fuel burning equip-
ment located in different dwelling
units shall not be connected to
the same flue.
o Single-wall metal smoke pipe or
connector shall not pass through
a floor, attic, inside wall, par-
tition, or concealed space.
o Single wall metal smoke pipe or
connector passing through an ex-
terior wall or a roof shall be
guarded at the point of passage
by a suitable metal collar.
o Incinerator flues equipped with
service openings shall not be
used as flues for other fuel-
burning equipment.
o Chimneys and flues connected to
equipment burning solid or liquid
fuel shall have a suitable soot
pocket and cleanout door at the
base. (H1-507.1)

o Defines buildings with fireplaces
or chimneys which list, bulge, or
settle due to defective material
or deterioration or which are of
insufficient size or strength to
carry imposed loads with safety
as substandard buildings.
(1001 (c))

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

(No specific requirement)

o All chimneys, cooling towers, smoke stacks, and similar appurtenances shall be maintained structurally safe, sound and in good repair, all exposed surfaces of metal or wood shall be protected from the elements and against decay or rust by periodic application of weather-coating material such as paint or similar surface treatment.

(PM-302.3.6)

o All fuel-burning equipment shall be connected to an approved chimney, flue or vent.

(PM601.4.1)

o Fireplaces and other devices intended for use similar to a fireplace shall be stable and structurally safe and connected to approved chimneys.

(PM601.5)

o Chimneys, flues and vents shall be structurally safe, durable, smoketight and capable of withstanding the action of flue gases or shall be restored to such a condition.

(B.7.2)

o Shall be structurally safe, durable, smoketight, and capable of withstanding the action of flue gases.

(7-6)

o Existing unlined masonry chimneys having open mortar joints or cracks which permit smoke or flame to be discharged into the building should either be removed or be made safe by the installation of a flue liner or corrosion-resistant pipe one inch less in diameter than the interior of the chimney.

(Guides.7-11)

CHIMNEYS, VENTS & INCINERATORS (Cont.)

SUBJECT MATTER

APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.

NEW YORK STATE MODEL
HOUSING CODE,
1974

UNIFORM HOUSING CODE,
1979 EDITION (ICBO)

<p>1. <u>Requirements for chimneys, flues, and vents. (cont.)</u> - Draft</p>	<p>(No specific requirement)</p>	<p>o Chimneys, flues, and gas vents shall be installed and maintained to provide sufficient draft. (H1-507.2)</p>	<p>(No specific requirement)</p>
<p>- Factory-built chimneys</p>	<p>(No specific requirement)</p>	<p>(No specific requirement)</p>	<p>(No specific requirement)</p>
<p>- Fire safety</p>	<p>(No specific requirement)</p>	<p>o Chimneys, flues and gas vents shall be installed and maintained so that the surface temperature of adjacent combustible construction does not exceed 175°F. (H1-507.3)</p>	<p>(No specific requirement)</p>
<p>- Spark arresters</p>	<p>(No specific requirement)</p>	<p>o A chimney or flue connected to an incinerator, and a chimney or flue which emits sparks, shall be provided with a spark arrester of noncombustible construction. Spark arresters shall have sufficient total clear area to permit unrestricted passage of flue gases. Openings in spark arresters shall be of such size as to prevent passage of embers and to minimize clogging by soot. (H1-507.4)</p>	<p>(No specific requirement)</p>

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

(No specific requirement)	(No specific requirement)	o Tops of chimneys and flues shall be extended sufficiently so as to provide proper draw venting characteristics (draft) as required by the building code or other ordinance for new construction. (B.7.2)	(No specific requirement)
(No specific requirement)	(No specific requirement)	(No specific requirement)	o Factory-built chimneys shall be labeled by Underwriters' Laboratory, Inc. and installed in accordance with the listing. (7-6)
(No specific requirement)	o All required clearances to combustible materials shall be maintained. (PM601.4.2)	(No specific requirement)	(No specific requirement)
(No specific requirement)	(No specific requirement)	(No specific requirement)	(No specific requirement)

CHIMNEYS, VENTS & INCINERATORS (Cont.)

SUBJECT MATTER	APHA-CDC RECOMMENDED HOUSING MAINTENANCE AND OCCUPANCY ORDINANCE, 1975 REV.	NEW YORK STATE MODEL HOUSING CODE, 1974	UNIFORM HOUSING CODE, 1979 EDITION (ICBO)
<p>2. <u>Requirements for incinerators</u> - Construction, installation, serviceability, durability</p>	(No specific requirement)	<p>o Specific requirements given for: 1-Capacity 2-Emission of contaminants 3-Combustion of refuse 4-Spark arrester 5-Connection to chimney, smoke- stack or flue 6-Alignment and surface finish. (H1-508.1)</p>	(No specific requirement)
- Service openings	(No specific requirement)	<p>o Specific requirements given for: 1-Accessibility to occupants 2-Self-closing devices and charg- ing devices for dropping refuse 3-Signs and graphics to warn of hazards. (H1-508.2)</p>	(No specific requirement)
- Incinerator rooms and refuse rooms	(No specific requirement)	<p>o Specific requirements given for: 1-Openings to minimize heat trans- mission 2-Locks or safety devices to pre- vent tampering by unauthorized persons. (H1-508.3)</p>	(No specific requirement)

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

(No specific requirement)	(No specific requirement)	(No specific requirement)	o Shall be structurally safe, durable, smoketight, and capable of withstanding the action of flue gases. (7-6)
(No specific requirement)	(No specific requirement)	(No specific requirement)	(No specific requirement)
(No specific requirement)	(No specific requirement)	(No specific requirement)	(No specific requirement)

Appendix O
NOISE ABATEMENT REQUIREMENTS

NOISE ABATEMENT REQUIREMENTS

SUBJECT MATTER

APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.

NEW YORK STATE MODEL
HOUSING CODE,
1974

UNIFORM HOUSING CODE,
1979 EDITION (ICBO)

1. Noise Control

(No specific requirement)

o Certain home occupations are prohibited in dwelling units which produce offensive noise. (111-204)

(No specific requirement)

STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)

BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)

CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)

HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978

(No specific requirement)

(No specific requirement)

(No specific requirement)

o Where there is revised planning and new construction contemplated of floors and partitions between living units and between living units and public and service spaces, consideration should be given to using noise reduction and noise isolation techniques in order to provide acoustic separation and auditory privacy. The minimum sound transmission class (STC) rating of the construction for such purposes should be 45 for airborne noise (STC as determined by ASTM E90-66T). For structure-borne or impact noise, the impact noise ratio (INR) should be in a range from +5 to -5.

o Design and Construction Suggestions:

1. Where practical, functional areas of high noise should be separated from areas of quiet. Clothes or storage closets are useful separators.
2. Partitions should extend to solid floor-ceiling construction and should not terminate at hung ceilings.
3. Pipes should be caulked and wrapped and ductwork should be sealed where they penetrate sound-impeding partitions and floors. Ducts should be lined near registers or grilles, and at fan discharge.

NOISE ABATEMENT REQUIREMENTS (Cont.)

SUBJECT MATTER

APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.

NEW YORK STATE MODEL
HOUSING CODE,
1974

UNIFORM HOUSING CODE,
1979 EDITION (ICBO)

1. NOISE CONTROL (cont.)

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

4. Motors, fans and other mechanical equipment should be balanced and mounted.
5. Where kitchens or bathrooms are located back-to-back, special attention should be given to the construction to reduce noise from plumbing fixtures and noise through medicine cabinets.
6. Where living units are adjacent to high noise areas such as boiler rooms or other mechanical equipment, the construction separating the spaces should provide a greater noise resistance than normal room separation.
(4-18, Guides)

Appendix P
QUALITY OF MATERIALS AND PRODUCTS

QUALITY OF MATERIALS AND PRODUCTS

SUBJECT MATTER

**APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.**

**NEW YORK STATE MODEL
HOUSING CODE,
1974**

**UNIFORM HOUSING CODE,
1979 EDITION (ICBO)**

<p>1. <u>Scope/Purpose</u></p>	<p>o All construction and materials, ways and means of egress, and installation and use of equipment shall conform with the appropriate statutes, ordinances, and regulations dealing with fire protection of this (name of Corporate Unit). (7.13)</p>	<p>(No specific requirement)</p>	<p>o Faulty Materials of Construction- All materials of construction except those which are specifically allowed or approved by this code and the Building Code, and which have been adequately maintained in good and safe condition. (1001(j)) (Definition of "Substandard Building")</p>
<p>2. <u>Degree of Conformance</u></p>	<p>(No specific requirement)</p>	<p>(No specific requirement)</p>	<p>(No specific requirement)</p>
<p>3. <u>Second-hand Materials</u></p>	<p>(No specific requirement)</p>	<p>(No specific requirement)</p>	<p>(No specific requirement)</p>

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

(No specific requirement)	(No specific requirement)	<ul style="list-style-type: none"> o The provisions of this section shall govern the quality and related requirements for all materials and methods for use in rehabilitated buildings. (B.9) 	<ul style="list-style-type: none"> o To provide materials of such kind and quality as to assure that the dwelling will provide: (a) appropriate structural strength, (b) adequate resistance to weather and moisture, and (c) reasonable durability and economy of maintenance. (6-1)
(No specific requirement)	(No specific requirement)	<ul style="list-style-type: none"> o Materials and products used as replacements or additions in rehabilitation construction shall be of quality conforming to nationally recognized standards. The acceptability of special materials and products not conforming to a nationally recognized standard or for which a nationally recognized standard does not exist, shall be determined by the administrative authority, based upon an analysis and evaluation of its properties and performance characteristics. (B.9.1) 	<ul style="list-style-type: none"> o All materials and products used as replacements or additions in rehabilitation construction shall be of good quality conforming to generally accepted good practice. o The suitability of special materials and products not conforming to a national standard shall be determined by proper authority, after an evaluation of its properties and performance characteristics. (6-2)
(No specific requirement)	(No specific requirement)	<ul style="list-style-type: none"> o Second-hand or used materials may be used in rehabilitation construction when such use is approved by the administrative authority. (B.9.2) 	<ul style="list-style-type: none"> o Second-hand materials which meet the standards for new materials may be used when approved by the proper local authority. (6-2)
P-3			

QUALITY OF MATERIALS AND PRODUCTS (Cont.)

SUBJECT MATTER

APHA-CDC RECOMMENDED
HOUSING MAINTENANCE
AND OCCUPANCY ORDINANCE,
1975 REV.

NEW YORK STATE MODEL
HOUSING CODE,
1974

UNIFORM HOUSING CODE,
1979 EDITION (ICBO)

SUBJECT MATTER	APHA-CDC RECOMMENDED HOUSING MAINTENANCE AND OCCUPANCY ORDINANCE, 1975 REV.	NEW YORK STATE MODEL HOUSING CODE, 1974	UNIFORM HOUSING CODE, 1979 EDITION (ICBO)
4. <u>Alternate Materials</u>	(No specific requirement)	(No specific requirement)	(No specific requirement)
5. <u>Standards/Labeling</u>	(No specific requirement)	(No specific requirement)	(No specific requirement)

**STANDARD HOUSING CODE,
1979 EDITION
(SBCCI)**

**BASIC PROPERTY MAINTENANCE
CODE, 1978 EDITION
(BOCA)**

**CODE ENFORCEMENT GUIDELINES
FOR RESIDENTIAL REHABILITATION
(BOCA)**

**HUD 4940.4, MINIMUM
STANDARDS FOR REHABILITATION
FOR RESIDENTIAL PROPERTIES,
FEB. 1978**

<p>(No specific requirement)</p>	<p>(No specific requirement)</p>	<p>o The provisions of these guidelines are not intended to prevent the use of any material or product not specifically prescribed by this code, provided any such alternate has been approved. The administrative authority may approve such alternates based upon an analysis and evaluation that indicates the proposed design is satisfactory for the intended use and complies with the requirements of the applicable codes and ordinances of this jurisdiction. (B.9.3)</p>	<p>(No specific requirement)</p>
<p>(No specific requirement)</p>	<p>(No specific requirement)</p>	<p>o The standards listed or referred to in the model codes published by the American Insurance Association, Building Officials and Code Administrators International, International Conference of Building Officials or Southern Building Code Congress International may serve as criteria for accepted safe engineering practice for various materials, products, systems of construction, or specific uses as required by the provisions of these guidelines. (B.9.4)</p>	<p>o The quality of new materials and products used as replacements or additions to residential buildings being rehabilitated should comply with the provisions of nationally recognized standards wherever such standards exist. For an appropriate identification of these standards for materials and products, see MPS for Multi-family Housing (HUD 4910.1) o All new materials and products should be labeled or otherwise identified as conforming to an applicable recognized standard. (6-3, Guides)</p>
<p>P-5</p>			



